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Animal Welfare and Ethics Resources for Youth and College Agricultural Educators

September 2000



AWIC Resource Series No. 6 - revised and enlarged

Cover photo by Edwin Remsberg of the University of Maryland, College of Agriculture and Natural Resources

Michael Headley, 9, of Westminster (Carroll County) shows off his reserve champion bantam following the 4-H poultry show at the Maryland State Fair in Timonium.

Animal Welfare and Ethics Resources for Youth and College Agricultural Educators

September 2000

**Compiled by: Cynthia Petrie Smith, M.S.
U. S. Department of Agriculture
Agricultural Research Service
National Agricultural Library
Animal Welfare Information Center
10301 Baltimore Avenue
Beltsville, MD 20705
e-mail: awic@nal.usda.gov
website: <http://www.nal.usda.gov/awic>**

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Nal Bldg.
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Introduction

The following resource guide was developed to assist 4-H, Future Farmers of America (FFA), and other youth and college agricultural educators in locating materials to assist in teaching animal welfare and ethics. Emphasis was placed on providing materials that are accessible through land grant universities, the collection of the National Agricultural Library (NAL), or the internet. The materials listed include audiovisuals, books, bibliographies, conference proceedings, journal articles, organizations, and websites. This listing is not comprehensive but is intended to act as a starting point for educators to develop curriculum to meet their own specific needs. Selected resources cover welfare, ethics, behavior, care, and health of livestock and poultry.

Inclusion of materials in this guide does not constitute endorsement by the U.S. Department of Agriculture. Items appearing in this publication do not represent positions or policies of the Department of Agriculture or any agency thereof.

Audiovisuals

The following list of audiovisuals was excerpted from the AWIC publication: **Audio-visuals Relating to Animal Care, Use, and Welfare**, *AWIC Series No. 2000-01*, by J.A. Larson and D.J.B. Jensen (2000). To obtain a hard copy of this publication patrons should contact AWIC at (301) 504-6212 or e-mail <awic@nal.usda.gov>. This publication is also available at the AWIC website at <http://www.nal.usda.gov/awic/pubs/aw200001.htm>

Audiovisuals listed below are available for loan from the National Agricultural Library (NAL). NAL lending policies and other loan information can be obtained from the Document Delivery Services Branch at <http://www.nal.usda/dds/> or e-mail <clending@nal.usda.gov> or phone (301) 504-5994. Many animal related videos are available for purchase by contacting publishers and/ or sponsoring organizations directly as well.

General

1

A Challenge to Care: Careers in Laboratory Animal Science [videocassette]. Cordoba, TN: American Association for Laboratory Animal Science; c1988; ½" VHS, 16 min.

Keywords: Vocational guidance, technicians, research, experimental psychologists.

Note: After a brief argument for the use of laboratory animals in medical research, the program discusses the careers available in the production, care, and management of laboratory animals.

NAL Call No.: Videocassette No. 711.

2

A Question of Respect. New York: American Society for the Prevention of Cruelty to Animals (ASPCA); 1988; 1/2" VHS, 12 min.

Keywords: Animal welfare, laboratory animals, animal experimentation, livestock, pets.

Note: The ASPCA looks at the inter-relationship between earth, animals, and man. The video discusses man's responsibility toward animals with respect to research, product testing, and pets.

NAL Call No.: Videocassette No. 801.

3

About Animals, The Question Is.... Lynnwood, WA: Progressive Animal Welfare Society; 1987; 1/2" VHS, 22 min.

Keywords: Intensive livestock farming, laboratory animals, animal welfare, ethics.

Note: A historical exploration of Western culture's beliefs and practices regarding animals.

Two practices are emphasized: the use of animals for food and for experimentation. The views of both critics and supporters of these practices are presented in order to stimulate questions and discussion by the audience. A study guide accompanies the videocassette.

NAL Call No.: Videocassette No. 332.

An Introduction to Zoonoses [videocassette]. Manhattan, KS: Kansas State University. College of Medicine; c1991; ½" VHS, 18 min.

Keywords: Zoonoses, Q fever, Psittacosis, preventative measures.

Note: Defines zoonoses and illustrates transmission vectors. Q-fever from dairy cows and Psittacosis from birds are given as examples of zoonotic diseases with symptoms exhibited by humans. Preventative measures of disease avoidance are discussed.

NAL Call No.: Videocassette No. 1661.

Animal Agriculture: Myths and Facts [videocassette]. Arlington, VA: Animal Industry Foundation; c1990; ½" VHS, 18 min.

Keywords: Factory farming, cattle, animal welfare, production.

Note: Farmers dispel the myths about cow/calf and feedlot cattle production, as well as turkey, hog, veal, and egg production. They emphasize that the care and well-being of their animals is very important for them and the continuation of their farms.

NAL Call No.: Videocassette No. 1131.

Animal Care, Use, and Ethics [videocassette series]. College Station, TX: Instructional Materials Service, Texas A&M University.

Keywords: Livestock ethics, youth programs, unethical practices, welfare.

Note: Series of seven informative and entertaining educational videos written and produced by Dr. Jeff Goodwin.

Animal Care, Use, and Ethics (continued)

- **Horses, Kids, and Ethics.** c1997; ½" VHS, 13 min., + 1 facilitator guide.

Note: This video shares "8 great ways" to make your youth horse program better.

NAL Call No.: Videocassette No. 2671.

- **A Step Beyond: A Question of Ethics.** c1995; ½" VHS, 23 min. + 1 facilitator guide.

Note: How to address the issue of livestock show ethics before situations arise at the local level.

NAL Call No.: Videocassette No. 2662.

- **A Question of Ethics.** 1994; ½" VHS, 20 min., 30 sec. + 1 facilitator guide.

Note: A basic introduction to the issue of livestock show ethics.

NAL Call No.: Videocassette No. 2637.

- **The Heart of the Matter.** c1993; ½ VHS, 21 min. +1 facilitator guide.

Note: A basic introduction to the philosophical concepts related to the case of animals in society.

NAL Call No.: Videocassette No. 1996.

- **What's the Beef?** c1991; 15 min. + 1 facilitator guide.
Note: A basic introduction to animal activist concerns related to agriculture.
NAL Call No.: Videocassette No. 1284.
- **Line in the Sand.** c1996, 16 min. +1 facilitator guide.
Note: The 4 step test offered in the video will help individuals discern if certain showing practices are ethical or unethical.
NAL Call No.: Videocassette No. 2669.
- **Quality Assurance: A Term Used by Animal Agriculture which Refers to the Production of High Quality, Safe, and Wholesome Food!** [videocassette]. College Station, TX: Instructional Materials Service; c1997; ½" VHS, 16 min.
Note: Written and produced by Dr. Jeff Goodwin; produced in cooperation with Western Fairs Association....[et al.]. Subtitle on container: Strengthening the chain of wholesome food production. This video addresses the issue of quality assurance in a fun and informative manner. It was designed to compliment quality assurance educational resources compiled by the California Department of Education, Department of Food and Agriculture, and Western Fairs Association, available on the internet at <http://www.fairsnet.org/quality/index.htm>
NAL Call No.: Videocassette No. 2747.

7

Animal Care and Use: Policy Issues in the 1990's [videocassette]. Katie McCabe; c1989; ½" VHS, 40 min.

Keywords: Animal rights, animal models, animal welfare, research, political activists.

Note: The video is a taping of a conference luncheon addressed by Katie McCabe on the animal rights movement and its effects on biomedical research today and the overall effect it will have on the world in the future.

NAL Call No.: Videocassette No. 903.

8

Animal Rights/Animal Welfare. Des Moines, IA: National Pork Producers Council; 1990, 1/2" VHS, 20 min.

Keywords: Animal rights, animal welfare, factory farming, animal husbandry, farming.

Note: Discussion of animal rights and animal welfare in relation to factory farming. The video displays perceived myths by the animal rights movement on factory farming. Discusses animal rights groups, their agendas, and their tactics. Gives advice on how people in the farming industry can deal with the issues and groups.

NAL Call No.: Videocassette No. 901.

Animal Welfare: Implications for Agricultural Research. Washington, DC: U.S. Department of Agriculture; 1990; 1/2" VHS, 22 min.

Keywords: Law, legislation, guidelines, impact, Russell and Birch, religion, behavior.

Note: Joy Mench, Ph.D, discusses the religious and historical aspects of animal welfare and animal rights, the guidelines and standards established for treatment of animals in a research setting, and the effect of the animal rights movement on both biomedical and agricultural research. She closes by emphasizing the need for more research in animal behavior, in order to maintain and improve the care of agricultural animals.

NAL Call No.: Videocassette No. 905.

Animal Welfare Information Center: Resources Today for the Research of Tomorrow

[videocassette]. Washington, DC: Video & Teleconference Division, USDA; 1989; ½" VHS, 11 min. 37 sec.

Keywords: Library, information, animal welfare, research, laboratory animals.

Note: This video describes the resources and services offered by the Animal Welfare Information Center (AWIC) at USDA's National Agricultural Library, including computer literature searching, production of bibliographies, identification of current research, and referrals. The film details how scientists and others can access information regarding laboratory animal care and use.

NAL Call No.: Videocassette No. 559.

Animal Welfare: The Farmers' Story [videocassette]. Park Ridge, IL: The American Farm Bureau Federation; c1981; ½" VHS, 3/4 U-Matic, 28 min. 30 sec.

Keywords: Dairy cows, hogs, poultry, intensive livestock farming, welfare.

Note: This film explores the economic and animal husbandry aspects of current animal farming practices through on site interviews with farmers. The film equates proper animal management practices with satisfactory animal welfare practices.

NAL Call No.: Videocassette Nos. 399 and 483.

Animals, Nature and Religion. Old Saybrook, CT: Connecticut Video Productions; 1980; 1/2" VHS, 38 min.

Keywords: Animal welfare, philosophy, American Indians, Hinduism, Buddhism, Christianity, Judaism, Taoism, sustainable agriculture, behavior, farm animals.

Note: Dr. Michael W. Fox surveys a wide spectrum of religious and philosophical thought to encourage respect for animals and nature. Fox emphasizes the need to change mankind's world view from one of self-centered domination (exemplified in the video by animal research, biotechnology, and modern agricultural practices) to a more holistic, interconnected concept of nature. The film ends with a plea for a more gentle, communal, and harmonious approach to life. A script accompanies the video.

NAL Call No.: Videocassette Nos. 418, 466, and 467 (three copies).

13

Biotechnology, Food, & Agriculture. University of Wyoming, Cooperative Extension Service. Washington State University, Cooperative Extension. Washington State University. Information Dept. [Pullman, Wash.] : Washington State University Information Department, 1995. 1 VHS videocassette (23 min.).

Keywords: Agricultural biotechnology, food biotechnology, genetic engineering, risks, benefits.

Note: Explores biotechnology applications in food production and processing, addressing the benefits and risks of agricultural biotechnology.

NAL Call No.: Videocassette No. 2652.

14

Biotechnology: On the Cutting Edge. An Interview with Geneticist Richard Burgess. Richard Burgess. Madison, WI: Hawkhill Video, c1991. 1 VHS videocassette (ca. 34 min.), 1 information sheet + 1 booklet (17 p. ; 22 cm.).

Keywords: Genetic engineering, biotechnology, societal concerns.

Note: Geneticist Richard Burgess discusses advances in biotechnology and contemporary social perceptions of continuing research in the field.

NAL Call No.: Videocassette No. 1971.

15

Biovideo: Animal Senses. Burlington, NC: Carolina Biological Supply Company; 1987; 1/2" VHS, 30 min.

Keywords: Stereoscopic vision, echolocation, pheromone, wild animals.

Note: An instructional program appropriate for high school and college science students, it explains how the major senses work and their importance to animal behavior and environmental adaptation. The anatomy and physiology of sight, hearing, smell, taste, touch, feeling, and balance are clearly illustrated using animations, diagrams, and live animals. Vertebrates and insects are emphasized. A manual accompanies the videocassette.

NAL Call No.: Videocassette No. 427.

16

Careers in Veterinary Medicine: a Rainbow of Choices [videocassette]. Raleigh, NC: North Carolina State University, College of Veterinary Medicine; c1992; ½" VHS, 20 min.

Keywords: Veterinary medicine, career opportunities, vocational guidance.

Note: Discusses various opportunities in the field of veterinary medicine in the fields of small animal, large animal, equine, zoo animal practice; public health; and research. Does not mention careers in state or federal regulatory positions or in the pharmaceutical industry.

NAL Call No.: Videocassette No. 1771.

17

Changing Relationship Between Humans and Animals. Minneapolis, MN: University of Minnesota; 1986; 1/2" VHS, 45 min.

Keywords: Pets, intensive livestock farming, biological diversity, technology, future, ethics.

Note: Moderator Dr. David Garloff and panelists Drs. Joe Quigley and John Brantner, all of the University of Minnesota, consider changes in the human-animal relationship resulting from modern technology. The panelists address the following questions: What would a world without animals be like? Do we need animals anymore? Why do we have animals if we do not need them? One panelist concludes that as the world becomes more dependent on technology, animals will become less important. Agricultural animals and pets are emphasized in the discussion.

NAL Call No.: Videocassette No. 321.

18

Common Ground: Farming and Wildlife. Alexandria, VA: National Audubon Society, Turner Broadcasting System, and WETA; 1987; 1/2" VHS, 57 min.

Keywords: Organic farming, ecology, habitat, sustainable agriculture, pesticides, herbicides, crop rotation.

Note: In recent years farmers have realized what escalating use of pesticides and herbicides are doing to the land, wildlife, and human health. This video illustrates how farmers are joining with conservationists, as well as land and soil managers, to save soil, water, wildlife, and the farm. The program highlights methods of raising crops that can benefit farming and work with nature's abundance for generations to come. A teacher's guide accompanies the tape.

NAL Call No.: Videocassette No. 1147.

19

Connections: Animals, People and Biotechnology. St. Louis, MO: Monsanto Company; 1990; 1/2" VHS, 19 min.

Keywords: Animal welfare, genetic engineering, feed utilization efficiency, animal experimentation.

Note: This video introduces the audience to the use of animals and new biotechnological techniques to assist both man and animal.

NAL Call No.: Videocassette No. 721.

20

Dance of Death. Boston: World Society for the Protection of Animals; 1991; 1/2" VHS, 8 min.

Keywords: Bulls, bullfights, animal welfare, pain.

Note: Shows the pain and suffering inflicted on a bull during a bullfight.

NAL Call No.: Videocassette No. 1709.

21

Do Animals Reason? Washington, DC: National Geographic Society; 1975; 16 mm, 14 min.

Keywords: Triggerfish, starlings, dolphins, chimpanzees, animal behavior, intelligence.

Note: Demonstrating classic and contemporary animal behavior experiments using fish, birds, and mammals, this film introduces students to the learning abilities of animals. A teacher's guide accompanies the film.

NAL Call No.: Motion Picture No. 188.

22

Do Animals Think and Feel? Minneapolis, MN: University of Minnesota; 1986; 1/2" VHS, 45 min.

Keywords: Animal behavior, intelligence, language, cognitive neuropsychology, splitbrain operations.

Note: University of Minnesota faculty members Gail Peterson (psychologist) and Joe Quigley (veterinarian) discuss animal behavior, consciousness, learning, intelligence, and emotions. Comparisons and contrasts are made between the mental and emotional processes of animals and humans. The panelists respond to audience questions.

NAL Call No.: Videocassette No. 319.

23

Every Link in the Chain. U.S. Dept. of Agriculture, Video, Teleconference & Radio Center; U.S. Dept. of Agriculture, Agricultural Marketing Service, Transportation and Marketing Division.

[Washington, DC?] : U.S. Dept. of Agriculture, Agricultural Marketing Service, Transportation and Marketing Division, 1997. 1 VHS videocassette (19 min., 42 sec.).

Keywords: Dairy cattle, US livestock marketing, transportation, handling, export sales, contracts.

Note: Each successful, humane livestock exporting experience is a team effort, and each link in the exporting chain--breeder, veterinarian, trucker, freight forwarder, and animal handler is essential. This video follows a shipment of dairy cattle from a farm in Maine to the port of embarkation at JFK International Airport.

NAL Call No.: Videocassette No. 2606.

24

Exodus at Yellowstone: The Second Catastrophe. Sacramento, CA: Animal Protection Institute of America; 1989; 1/2" VHS, 30 min.

Keywords: Hunting, bison, ecology, wildlife.

Note: In the winter of 1989, following a severe drought and fire that destroyed food supplies within the park, large numbers of bison were shot after straying beyond Yellowstone National Park boundaries. Various animal protection advocates voice their protests over bison hunting, which is sanctioned by the Montana State Department of Wildlife.

NAL Call No.: Videocassette No. 547.

25

Facing the Animal Rights Challenge. Animal Health Institute: Alexandria, VA; 1985; 49 slides, audiocassette, 7 min.

Keywords: Farm animals, animal welfare, legislation.

Note: Directed at livestock producers, this slide presentation answers these questions: Who are animal rights groups? What are their origins? What do they want to accomplish? What can producers do? The audience is given tips on how to best deal with animal rights demonstrators and how to influence legislation affecting livestock production.

NAL Call No.: Slide No. 289.

26

Farm Animal Behavior Research [videocassette]. Beltsville, MD: National Program Staff, Agricultural Research Service, USDA; June 8, 1990; ½" VHS, 100 min.

Keywords: Animal behavior, swine behavior, animal welfare, behavioral research.

Note: A videotaping of a seminar given by Dr. Stanley Curtis. Discusses current research in farm animal behavior, with emphasis on swine behavioral research. Addresses issues such as farm animal welfare, psychological well-being, and animal awareness.

NAL Call No.: Videocassette No. 906.

27

Farm Animal Welfare. London? Ministry of Agriculture Fisheries and Food, 199-? 1/2" VHS, 17 min., 11 sec.

Keywords: Animal welfare, Great Britain.

Note: Discusses various issues of animal welfare for farm animals in Great Britain.

NAL Call No.: Videocassette No. 2044.

28

Farm Animals with Care [videocassette]. England: Datascope Communications (produced for Glaxo Group Research in association with the Institute of Animal Technology); c1991; ½" VHS, 2 videocassettes, 65 min.

Keywords: Animal welfare, animal health, livestock, housing.

Note: A two volume series that illustrates regimes for housing and care of sheep, goats, pigs, cattle, and poultry, and provides breeding information and demonstrations of routine health care procedures and blood sampling techniques.

NAL Call No.: Videocassette No. 1359.

29

Food Safety and Animal Drugs: Testing, Testing, Testing [videocassette]. Alexandria, VA: Animal Health Institute; c1992; ½" VHS, 11 min., 42 sec; Includes 1 brochure.

Keywords: Veterinary drugs, United States, veterinary drug residues, food animal products, testing, drug approval process.

Note: Shows the procedures for testing and approving new animal drugs to ensure they will not negatively effect the safety of animal food products.

NAL Call No.: Videocassette No. 1530.

30

Handling Livestock Naturally [videocassette] Kansas City, MO: AgriBase, c1989; 1/2" VHS, 15 min.

Keywords: Livestock handling, animal welfare, behavior, transport, feeding and watering in markets, moving animals.

Note: Discusses viewing the world through the animal's eyes when handling them on the farm, for transport, and at markets. Covers how to transport with gentleness, understanding of the animal's field of vision, point of balance, flight zone, and blind spot, how to feed and water animals at markets, how to move animals without hitting, yelling, or electric shock, how to deal with medical problems, and caring of facilities to reduce injuries. The program was produced in conjunction with the Livestock Marketing Association.

NAL Call No.: Videocassette No. 1334.

31

In Defense of Animals: A Portrait of Peter Singer. Oley, PA: Bullfrog Films; 1989, 1/2" VHS, 28 min.

Keywords: Philosophy, biography, animal rights.

Note: An introduction to Peter Singer, his philosophy on animal rights, and his life's work. He describes the movement and how he got involved.

NAL Call No.: Videocassette No. 1080.

32

Intercultural Views of Animals. Minneapolis, MN: University of Minnesota; 1986; 1/2" VHS, 45 min.

Keywords: Cultural values, animals, religion, ethics.

Note: Four guests from different socio-religious cultures (Hindu, Moslem, East African, and Buddhist) discuss various aspects of the human-animal relationship relative to their cultural habits, beliefs, and social conventions. Their views are compared with American views on the subject.

NAL Call No.: Videocassette No. 322.

33

Just Do The Right Thing! Food Animal Quality Assurance Educational Tool Kit. [two videocassettes with facilitator guides, interactive computer program and written materials]. Bowling Green, KY: National Livestock Ethics Council.

Keywords: Quality assurance, livestock ethics, youth programs, animal well-being, quality assurance, welfare.

Note: Educational tool kit including video programs with facilitator guides, interactive computer programs and written materials designed to educate producers and exhibitors and enhance their knowledge on the principles and importance of food animal quality assurance and character development. Cost: \$200.

34

Keeping Nature in Balance. Jay Novacek. National Cattlemen's Association (U.S.); Non-Stop Productions. Engelwood, CO: National Cattlemen's Association, c1994. 1 VHS videocassette (28 min.).

Keywords: Conservation, natural resources, rangeland, beef cattle.

Note: This documentary features seven award-winning cattlemen and the steps their families are taking to ensure the land is productive for this and future generations.

NAL Call No.: Videocassette No. 2319.

35

Konrad Lorenz: Science of Animal Behavior "Animal behavior series." Washington, DC: National Geographic Society; 1986?; 1/2" VHS, 14 min. Includes 2 identical teacher's guides.

Keywords: Konrad Lorenz, animal behavior, animal intelligence, imprinting, social order.

Note: Examines the work of behaviorist, Konrad Lorenz, who holds that behavior is determined by a basic genetic blueprint that is modified by experience and innate knowledge. Imprinting and a study of rank and social order are also examined by various observations of various types of animal.

NAL Call No.: Videocassette No. 1162.

36

Livestock in Transit - Handle with Care [videocassette]. Potters Bar, Herts, England: Humane Slaughter Association; c1989; 1/2" VHS, 27 min.

Keywords: Transportation, humane slaughter, animal welfare.

Note: This production discusses and demonstrates humane and safe methods for loading, transporting, and unloading livestock.

NAL Call No.: Videocassette No. 1306.

37

Normal and Abnormal Behavior in Domestic Livestock Used for Research [videocassette]. Beltsville, MD: Animal Welfare Information Center, National Agricultural Library; West Lafayette, IN: Purdue University, c1993; 1/2" VHS, 41 min., 41 sec. includes 1 script.

Keywords: Livestock behavior, laboratory animals, cattle, horses, pigs, stereotypic behaviors.

Note: Examines normal and abnormal behavior in livestock used for research, helping the viewer distinguish between apparently pointless behavior and the possibility of physiological reasons behind behavior. This project was conducted on a cooperative grant with Purdue University.

NAL Call No.: Videocassette No. 1542.

38

Pfiesteria and the Factory Farm. Humane Society of the United States. Washington, DC: The Society, c1998. 1 VHS videocassette (7 min., 30 sec.).

Keywords: Poultry manure, environmental aspects, Chesapeake Bay, Maryland and Virginia, animal waste disposal, *Pfiesteria*, pollutants.

Note: Discusses how the disposal of animal wastes, particularly poultry manure, contributes to outbreaks of *Pfiesteria* in the Chesapeake Bay.

NAL Call No.: Videocassette No. 2739.

39

Preserving our Livestock Heritage. Pittsboro, NC : American Minor Breeds Conservancy, [199-?]. 1 VHS videocassette (13 min., 50 sec.).

Keywords: Conserving rare livestock, American Minor Breeds Conservancy organization.

Note: Discusses how many livestock breeds are facing extinction as breeders seek to meet farmer requirements for specialized animal traits. Concludes with a brief description of the work of the American Minor Breeds Conservancy.

NAL Call No.: Videocassette No. 2097.

40

Safety & Regulatory Issues in Transgenic Production of Biopharmaceuticals. Bethesda, MD: BioConferences International, Inc; c1994; 1/2" VHS, 93 min.

Keywords: Transgenic animals, conference, biopharmaceuticals, safety.

Note: Three speakers discuss the role of transgenic animals in the production of biopharmaceuticals. Topics covered include transgenic animals for the production of biological products, production of medicinal products for human use in transgenic animals, and therapeutics from transgenic animals and the adventitious agent concerns. Recorded during a session at BioEast'94 held in Washington, DC, Jan. 24-27, 1994.

NAL Call No.: Videocassette No. 1978.

41

Silent World: Genetic Engineering-Ethical, Environmental and Animal Welfare Concerns.

Washington, DC: Center for Respect of Life and Environment; 1988; 1/2" VHS, 39 min.

Keywords: Animal welfare, genetics, biotechnology, chimeras, ecology, diseases, patenting, intensive livestock farming, ethics, medical research, pesticides.

Note: Dr. Michael W. Fox considers the environmental effects and ethical implications of genetic engineering. Fox warns that the production of genetically altered organisms could lead to environmental devastation, reduced biological diversity, and increased suffering of research animals. The video examines recent genetic manipulations: monoclonal antibody production from mice, insertion of avian leukosis virus into poultry and the AIDS virus into mice, genetically engineered bacteria for bacterial pesticides, and pigs endowed with the human growth gene. The program concludes with a plea for greater respect for the sanctity of life and possible alternatives to genetic engineering.

NAL Call No.: Videocassette No. 417.

42

Superanimals, Superhumans? The Life Revolution. Films for the Humanities (Firm); Primedia Productions. Canoptic Productions.; TVOntario; Telefilm Canada. Princeton, NJ: Films for the Humanities & Sciences, Inc., c1990. 1 VHS videocassette (26 min.).

Keywords: Genetic engineering, animals, humans.

Note: Looks at the scientific goals and social controls of the genetic engineering of animals and humans. The film is part of the series Films for the Humanities and Sciences; produced by Primedia Productions and Canoptic Productions, in association with Channel 4 and TVOntario, with the participation of Telefilm Canada.

NAL Call No.: Videocassette No. 1963.

43

The Americas' View of Animals. Minneapolis, MN: University of Minnesota; 1986; 1/2" VHS, 45 min.

Keywords: Cultural values, history, religion.

Note: Representatives from the Jewish faith, South American Catholic faith, Fundamentalist Christian faith, and Native American culture discuss their views on human-animal relationships in the Americas. The discussion reveals how current attitudes toward animals have been influenced by religious beliefs and historical conventions.

NAL Call No.: Videocassette No. 323.

44

The Down Side of Livestock Marketing [videocassette]. Watkins Glen, NY: Farm Sanctuary; c1991; 1/2" VHS, 19 min.

Keywords: Cattle, pigs, marketing, animal welfare, downed animals, stockyards.

Note: Frank talk and explicit videotaping of weak, sick, and dying animals at stockyards and auctions comprise this tape. Farmers, livestock handlers, livestock transporters, profit margins, and low livestock prices combine to create pressures to overcrowd animals for transport and to ship sick or downed animals to market.

NAL Call No.: Videocassette No. 1285.

45

The Future of Human-Animal Relations. Minneapolis, MN: University of Minnesota; 1986; 1/2" VHS, 45 min.

Keywords: Pets, veterinary medicine, farm animals.

Note: This panel discussion addresses such topics as what pets will be like in the future, how preparation of veterinarians will change, the future of food animals, and our changing expectations from pets.

NAL Call No.: Videocassette No. 328.

46

The Other Side of the Fence [videocassette]. Camden, ME: American Society for the Prevention of Cruelty to Animals and Varied Directions, Inc.; c1988; ½" VHS, 10 min.

Keywords: Veal calves, intensive livestock farming, animal welfare.

Note: The narrator questions whether veal calves raised under modern intensive farming systems are supplied their fundamental needs of adequate shelter, nutrition, and companionship. Although the script denigrates this production system, the still pictures and footage of actual veal calf operations provide the viewer with a realistic depiction of modern veal production.

NAL Call No.: Videocassette No. 432.

47

Total Quality Management for Youth Producers [seven videocassettes and a facilitator's guide]. University of Nebraska-Lincoln Cooperative Extension, Lincoln, NE, and Iowa State University Extension, Ames, IA (1993).

Keywords: Food safety, food quality, quality environments, handling livestock safely, health regimens, beef, dairy, fish, poultry, sheep, swine.

Note: "Total Quality Management for Youth Producers" is designed to help young people, who raise food animals, apply TQM principles (focusing on the customer, using resources effectively, and continuous product improvement through enhanced problem solving skills) in order to produce high-quality, safe and wholesome food. The curriculum consists of 17 different learning activities and a series of 20 video segments, each under 10 minutes. The experiential learning model encourages youth grades 6-12 to "do" an activity, "reflect" and process what they've done and "use" their new learning by putting in action immediately with their own operation. Cost: \$100.

48

Transgenic Animals: Food Sources--FDA, FSIS, Industry and Future Perspectives.

BioConferences International, Inc.; BioEast (Washington, DC). Bethesda, MD: BioConferences International, c1993. 1 VHS videocassette (ca. 90 min.).

Keywords: Transgenic animals, congresses, food biotechnology, regulations, technology.

Note: Three speakers discuss transgenic animals as food sources. Topics covered include the Food Safety and Inspection Service's proposal on the regulation of transgenic food animals to ensure the safety and wholesomeness of products resulting from transgenic livestock and poultry, why use transgenic animals for food products, what is transgenic animal technology, and how scientific societies can help the public understand how transgenic animals are achieved.

NAL Call No.: Videocassette No. 2195.

49

Transgenic Animals in the Production of Biopharmaceuticals. Bethesda, MD: BioConferences International, Inc; 1993; 1/2" VHS, 104 min.

Keywords: Swine, transgenic animals, conference, biopharmaceuticals, swine.

Note: Four speakers discuss the role of transgenic animals in the production of biopharmaceuticals. Topics covered include the technological strategy of making transgenic animals for different purposes, production of proteins in the milk of transgenic animals, production of recombinant human hemoglobin in transgenic swine, and transgenic production of the human cystic fibrosis protein in livestock. The video is of a session of the conference BioEast'93 held in Washington, DC, January 24-27, 1993.

NAL Call No.: Videocassette No. 1977.

50

Transgenic Farm Animals. Washington, DC: USDA Food Safety and Inspection Service; 1986; 1/2" VHS, 53 min.

Keywords: Biotechnology, pigs, USDA.

Note: This is a videotaped seminar given by Dr. Douglas Bolt, USDA-ARS Reproduction Physiology Laboratory, describing the methodology and results of a research project in which a foreign growth enhancing gene was transferred by microinjection into the pronuclei of a pig's ovum.

NAL Call No.: Videocassette No. 264.

51

Understanding Farm Animal Behavior [videocassette]. Minneapolis, MN: University of Minnesota; c1986; 1/2" VHS, 45 min.

Keywords: Cattle, pigs, farm animals, behavior, animal welfare.

Note: Dr. William Hall, Professor of Veterinary Medicine at the University of Illinois, and Dr. William Rempel, Professor of Animal Science at the University of Minnesota, discuss and explain aspects of farm animal behavior. The panelists field questions from the moderator and the audience. The discussion touches on factory farming and animal rights.

NAL Call No.: Videocassette No. 367.

Livestock

Cattle

52

Bovine Restraint [videorecording]. East Lansing, Michigan: Michigan State University; c1976; 1/2" VHS, 12 min., 20 sec.

Keywords: Cattle, handling, restraint.

Note: Demonstrates a number of ways to restrain cows including the use of the rope halter, nose lead, and burley casting methods.

NAL Call No.: Videocassette No. 2042.

53

BST & Milk: Issues & Answers. Image Base (Firm); American Medical Television.; American Medical Association. [S.I.]: Image Base, c1993. 1 VHS videocassette (20 min., 30 sec.).

Keywords: Bovine somatotropin, composition of milk, use in dairy cattle, societal concerns, animal health.

Note: Explores the issues surrounding the use of bovine somatotropin (BST) in cows to increase milk production. Program explores how BST works to stimulate milk production, and supports the argument that its safe for humans to consume milk with BST. Features statements by leading experts, including M. Roy Schwarz, Dennis M. Bier, Sanford A. Miller, Ronald E. Kleinman, Richard H. Phipps and Dennis Avery.

NAL Call No.: Videocassette No. 1715.

54

BST: Continuing a Dairy Tradition. St. Louis, MO: Monsanto Company; 1988; 1/2" VHS, 11 min.

Keywords: Bovine somatotropin, biotechnology, milk.

Note: Experts in animal science, human health, and agricultural economics answer important questions from Wisconsin dairy farmer Greg Mell. The film serves as a general overview of the nature of bovine somatotropin, including its use and safety.

NAL Call No.: Videocassette No. 458.

55

BST Debate: Biotechnology and the Dairy Case. A Supermarket Insights Special Report.

Monsanto Agricultural Company. Stamford, CT: Retail Insights, 1990. 1 VHS videocassette (14 min.).

Keywords: Bovine somatotropin, agricultural biotechnology, milk products, US.

Note: Bovine somatotropin or BST is enhancing the way milk is produced. This video report focuses on how BST fits into the overall biotechnology picture, what possibilities it's likely to present at the retail level and offers some special tactics retailers can use in addressing questions shoppers may have on BST.

NAL Call No.: Videocassette No. 1461.

56

Cattle Handling and Transportation [videocassette]. Bowling Green, KY: Livestock Conservation Institute; c1988; ½" VHS, 16 min.

Keywords: Intensive livestock farming, behavior, loading equipment, cattle.

Note: This training video explains the basics of cattle behavior as it relates to moving and transporting livestock efficiently and humanely. Vision, reaction to noise, flight zone, natural circling, and following behavior are discussed. Other topics include overcrowding in pens, use of squeeze chutes, loading and unloading trucks, truck-driving techniques, and temperature stress during transportation.

NAL Call No.: Videocassette No. 422.

57

Calving Time Management/Equipment [videocassette]. Part of the series "Video programs for education business industry." Ames IA: Iowa State University. Cooperative Extension Service; RMI Media Productions; and WOI-TV (Television station). Distributed by RMI Media Productions, of Shawnee Mission, KS; c1980; ½" VHS, 24 min.

Keywords: Cattle parturition, birthing.

Note: The basics of managing the calving process. Descriptions of needed equipment and basic techniques are discussed.

NAL Call No.: Videocassette No. 1440.

58

Cow Handling [videocassette]. Davis, CA: University of California; c1980; U-Matic 3/4", 19 min. (Vol. 1), 40 min. (Vol. 2).

Keywords: Cows, restraint, handling, veterinary medicine, biomedical techniques.

Note: Volume 1 demonstrates techniques for manually restraining the cow. The tape illustrates the use of the halter, nose ring, nose lead, and hobbles, and demonstrates techniques for manipulating the tail and preventing kicks. Volume 2 demonstrates the following biomedical procedures: blood collection, vein location, bone marrow biopsy, injections, drenching, minor teat surgery, treatment of displaced abomasum and carcinoma of the eye, and use of the stomach tube, dose syringe, balling gun, and speculum.

NAL Call No.: Videocassette No. 227.

59

Dehorning Cattle [videocassette]. San Luis Obispo, CA: Da-Nel Productions; Vocational Education Productions; c1985; ½" VHS, 25 min.

Keywords: Dehorning, techniques, horns, physiology, purpose, animal welfare.

Note: Discusses why and when cattle are dehorned. Provides information on horn growth and its physiology. Gives dehorning techniques used and at what age. Demonstrates several methods of dehorning. Discusses restraint and veterinary care needs.

NAL Call No.: Videocassette No. 844.

60

Modern Veal Production: A Mixture of Technology and the Family Farm [videocassette].

American Veal Association: Freemont, WI; c1987; ½" VHS, 9 min.

Keywords: Farm animals, housing, transportation, nutrition, anemia, husbandry, cattle.

Note: This video is part of a marketing effort to educate laymen about how farmers utilize modern technology and proper management practices to raise veal calves. Special fed veal calves are shown in individual pens that reduce stress, decrease health risks, and increase feed efficiency. The video examines nutrition, health maintenance programs and addresses concerns over anemia in calves.

NAL Call No.: Videocassette No. 481.

61

Questions & Answers about BST and Milk . Washington, DC: Dairy Coalition, 199-?; 1/2"

VHS, 6 min.

Keywords: Bovine somatotropin, effects of BST on milk quality and composition.

Note: Former U.S. Surgeon General C. Everett Koop answers questions about BST and milk. Topics discussed include the composition of milk from cows treated with BST, the safety of milk from cows treated with BST, the effect of BST on cows' health, antibiotic residues, and labeling requirements for milk from cows treated with BST.

NAL Call No.: Videocassette No. 1885.

62

Reducing Residues in the Main Causes of Violations: The Cull Dairy Cow and the Bob Veal

Calf. Points to Dairy Quality. Benny Burge Norman; University of California, Davis;

Agri-Education, Inc; Milk & Dairy Beef Quality Assurance Program. Stratford, Iowa: Milk & Dairy Beef Cattle Quality Assurance Center, c1993. 1 videocassette (VHS), 2 sound cassettes, 1 set of teaching materials

Keywords: Veterinary drugs, residues, product quality assurances, diseases chemotherapy, food safety concerns, production practices.

Note: Describes the ten-point program established by the National Milk Producers Federation and the American Veterinary Medicine Association to establish standards for the treatment of dairy and beef cattle with drugs and prevent residues from entering the food supply. Emphasizes the importance of the working relationship between the veterinarian and the producer. Produced by the University of California, Davis in cooperation with Agri-Education, Inc. "USDA Extension Service #91-EFSQ-1-4020." Instructional materials include script of video in English and Spanish, questions and answers, narratives to radio messages, 4-H educational package, copies of slides and several articles. Slides originally issued with chapter 8 have been replaced by photos of the slides.

NAL Call No.: Kit No. 246.

63

Separating Fact from Myth: The Veal Industry Challenge. Chicago: Beef Industry Council (US), Veal Committee. American Veal Association; 1990; 1/2" VHS, 11 min.

Keywords: Veal industry, animal welfare issues, food safety.

Note: Describes the veal industry's viewpoint on the issues of animal welfare and food safety.

NAL Call No.: Videocassette No. 1537.

64

Understanding Dairy Cattle Behavior to Improve Handling & Production [videorecording]. Bowling Green, KY: Livestock Conservation Institute; c1992; 1/2", 24 min.

Keywords: Dairy farming, dairy cows, behavior, handling, milk production.

Note: Provides insight into dairy cattle behavior for handlers and herders. Gives suggestions to reduce handling stress which can result in improved milk production.

NAL Call No.: Videocassette No. 2036.

65

Veal Farming Is Special [videocassette]. Park Ridge, IL: American Farm Bureau Federation; c1983; 1/2" VHS, 12 min.

Keywords: Veal calves, intensive livestock farming, animal welfare, husbandry.

Note: Promoting the merits of the veal industry, this film begins with a tour of a family-operated veal farm. Family members comment on aspects of animal management including iron supplementation, ventilation, and sanitation. Dr. Don Lawson of the Provimi Veal Company discusses research on alternate housing systems, including the loose housing and modified stall systems.

NAL Call No.: Videocassette No. 436.

66

Youth and Dairy Cattle: A Safe Partnership [videocassette]. Bowling Green, KY: Livestock Conservation Institute; c1994; 1/2" VHS, 16 min.

Keywords: Milking cows, calves, livestock farming, animal welfare, husbandry.

Note: This video is designed to teach young people the key principles of dairy cattle behavior. It emphasizes safety and gentle, knowledgeable handling methods. Topics discussed include flight zone, vision, reaction to noise, and following behavior.

NAL Call No.: Videocassette No. 2483.

Horses

67

Barn Construction [videocassette]. Lexington, KY: Blood-Horse Productions; c1984; $\frac{1}{2}$ " VHS, 30 min.

Keywords: Stables, design, barns, construction, costs.

Note: Tours of several horse barns demonstrate factors such as fire safety, appearance, durability, function and cost which influence barn design.

NAL Call No.: Videocassette No. 1896.

68

Beating Muscle Injuries in Horses [videocassette]. West Bath, ME: Diamond Video Productions; c1981; $\frac{1}{2}$ " VHS, 72 min.

Keywords: Wounds and injuries, physiological aspects.

Note: Care and prevention of equine muscle injuries is detailed by the author Jack Meagher.

NAL Call No.: Videocassette No. 1934.

69

Breaking Yearlings [videocassette]. Lexington, KY: Blood-Horse Productions; c1985; $\frac{1}{2}$ " VHS, 38 min.

Keywords: Horses, yearlings, breaking, training for racing.

Note: Shows step by step procedures that professionals have found successful in breaking yearlings and developing race horse potential.

NAL Call No.: Videocassette No. 1895.

70

Broodmare Management [videocassette]. Lexington, KY: Blood-Horse Productions; c1984; $\frac{1}{2}$ " VHS, 32 min.

Keywords: Thoroughbred horse breeding, mares, management.

Note: Describes a management program for the breeding of thoroughbred horses, with emphasis on the care and preparation of the mare. Discusses the use of artificial lighting, a teasing program, rectal palpation, use of hormones, diagnostic ultra-sound examination, endoscopic examination, clinics for infertile mares, breeding sheds, and the shipping of foaling mares. The intended audience for this program is thoroughbred horse breeders.

NAL Call No.: Videocassette No. 1891.

71

Careers in the Horse Industry: Unbridled Opportunities [videocassette]. Washington, DC: Colorado State University, Public Relations Department, Equine Sciences Program, Extension Horse Program; 1990; ½" VHS, 24 min.

Keywords: Interviews, industry, vocations, youth education.

Note: Designed for youth interested in horses and seeking careers and opportunities within the horse industry. It features interviews with people in all aspects of the industry, including trainers, veterinarians, sales agents, advertisers, photographers, computer specialists, lawyers, and journalists.

NAL Call No.: Videocassette No. 1318.

72

Emergency Care [videocassette]. Lexington, KY: Blood-Horse Productions; c1984; ½" VHS, 32 min.

Keywords: Horses, diseases, injuries, veterinary care, diagnosis, physical examination.

Note: A veterinarian demonstrates a routine physical examination which could be performed by a farm manager when faced with a sick or injured horse.

NAL Call No.: Videocassette No. 1898.

73

Fancy Footwork. Horseowner's Guide to Sound Shoeing Practices [videocassette]. Publisher Equalign; c1992; ½" VHS, 60 min.

Keywords: Horse shoeing.

Note: Meredith Clarke explains the intricate relationship between the structure and function of the foot, and correct shoeing procedures.

NAL Call No.: Videocassette No. 1903.

74

Foal Management [videocassette]. Lexington, KY: Blood-Horse Productions; c1984; ½" VHS, ca. 30 min.

Keywords: Foals, management, husbandry.

Note: Visits to several horse breeding farms afford an insight into the importance of early handling, vaccination and feeding programs, illnesses common to the young horse, and proper hoof care.

NAL Call No.: Videocassette No. 1892.

75

Foaling Fundamentals: A Video Handbook for Healthy Foaling [videorecording]. Virginia City, NV: Video Velocity; c1989; ½" VHS, 52 min. Includes a guide book.

Keywords: Foals, birth, postnatal care, mares, reproduction.

Note: Covers care of pregnant mare, foaling equipment and facilities, and all aspects of postnatal care.

NAL Call No.: Videocassette No. 2011.

76

Horses, Kids, and Ethics [videorecording]. College Station, TX: Instructional Materials Service, Texas A&M University; c1997; ½" VHS, 13 min. Includes a guide book.

Keywords: Ethics, animal welfare, youth, 4-H, unethical practices.

Note: Dr. Jeff Goodwin discusses ethical decisions in youth horse programs.

NAL Call No.: Videocassette No. 2671.

77

Imprint Training the Foal East Rutherford, NJ: Thousand Oaks, CA: Palomine Productions; c1985; ½" VHS, 60 min.

Keywords: Foal behavior, imprinting, psychology.

Note: Dr. Robert Miller covers the training of foals from the time of birth through first months to gentle them, prepare them for future schooling, and to minimize injury to handlers.

NAL Call No.: Videocassette No. 1902.

78

TTouch for Horses La Quinta, CA: Thane Marketing International; c1993; ½" VHS, 47 min.

Keywords: Behavior, training, health, animal communication.

Note: Linda Tellington-Jones demonstrates how touches can be used to change a horse's behavior and also to ease pain and stress associated with old age, injuries or surgery.

NAL Call No.: Videocassette No. 2355.

Poultry

79

Poultry at Home [videocassette]. Ipswich, UK; Farming Press Videos; Diamond Farm Enterprises; Alexandria Bay, NY; c1993; ½" VHS, 77 min.

Keywords: Raising chickens, basic management, health.

Note: A beginner's guide to poultry health and management. Victoria Roberts, and Julie Musk use over 50 pure breeds to illustrate various points. Topics include: choosing your breed, housing, handling, predators, feed and digestion, diseases and parasites, breeding, sexing, candling eggs, and rearing chicks.

NAL Call No.: Videocassette No. 1914.

80

Sentenced for Life (Also called "Chicken for Dinner.") Potomac, MD: United Poultry Concerns, Inc.; 1990; 1/2" VHS, 34 min.

Keywords: Battery systems, poultry production, intensive housing, welfare.

Note: Produced by Chickens' Lib in the U.K., this exposé documents the battery caging systems used for housing poultry in egg production in Great Britain. Welfare, housing, and behavior are addressed.

NAL Call No.: Videocassette No. 1288.

Rabbits

81

Rabbits: Bacterial and Mycotic Diseases [slide set]. Seattle, WA: University of Washington, Health Sciences Center for Educational Resources; 1990; 60 slides, guide, audio cassette, 19 min.

Keywords: Signs, diagnosis, observation.

Note: Series 2 of the Laboratory Animal Medicine and Science slide series, which covers clinical signs of pasteurellosis, enterotoxemia, mucoid enteropathy, treponematoses, mastitis, Tyzzer's disease, and superficial mycoses.

NAL Call No.: Slide No. 384.

Sheep

82

Lamb Survival [videorecording]: Ipswich; Farming Press Videos; Alexandria Bay, NY. Distributed in N. America by Diamond Farm Enterprises; c1993, 1/2" VHS, 84 min.

Keywords: Lambs, post natal care.

Note: David Henderson presents techniques to help lambs survive their first few days of life.

NAL Call No.: Videocassette No. 1937.

Swine

83

America's Pork Producers: Stewards of the Land. National Pork Producers Council (U.S.); National Pork Board (U.S.). Des Moines, IA : The Council, [1995] 1 VHS videocassette (ca.16 min.).

Keywords: Pork industry and trade, environmental aspects, agricultural conservation.

Note: Presents interviews with several pork producers who have excelled in their efforts to conserve and protect the environment.

NAL Call No.: Videocassette No. 2364.

84

European Pork Production: Animal Welfare Concerns. Ames, IA: Iowa State University, University Extension, c1993. 1 VHS videocassette.

Keywords: Swine, pork industry and trade, Europe, animal welfare.

Note: "Sponsored by the Iowa Pork Producers, Pfizer Animal Health and Schering-Plough Animal Health" Consists of 4 parts. Why the concern? (30 min.); Pigs outside, pigs inside (30 min.); Fiber-based pigs (30 min.); Producers and consumers (30 min.).

NAL Call No.: Videocassette No. 2693.

85

Pork Quality Assurance: FDA and Your Farm. A Program of America's Pork Producers. National Pork Producers Council (U.S.); University of Nebraska, Lincoln. Cooperative Extension. Des Moines: National Pork Producers Council, c1994. 1 VHS videocassette, 2 booklets, 1 set of self-assessment materials, 1 calendar.

Keywords: Veterinary drugs, U.S., drug residues, laws and regulations, swine diseases, disease prevention, meat quality.

Note: A learning program designed to teach hog farmers the proper use of veterinary drugs. The two booklets contain the texts of the three learning modules. The videotape is used with lesson III. Issues discussed include: food safety, illegal drug residues, HACCP, drug regulators such as the FDA, EPA and FSIS, medicated feeds, mixing guidelines, and GMP (Good Management Practices). Videotape has segments: Pork quality assurance (37 min.); FDA and your farm : what you need to know (12 min.); Quiz (12 min.).

NAL Call No.: Kit No. 278.

86

Practical Outdoor Pig Production [videorecording]. Ipswich; Farming Press Videos; Distributed in N. America by Diamond Farm Enterprises of Alexandria Bay, NY ; c1993; ½ " VHS, ca 40 min.

Keywords: Swine breeding, housing, record keeping.

Note: Features examples of breeding units showing basic requirements, essential services, housing and equipment, records, and integration with other farming enterprises.

NAL Call No.: Videocassette No. 1912.

87

Proper Pig Handling for Markets & Packers : Manejo Correcto de Cerdos para los Mercados y las Empresas Empaquetadoras. National Pork Producers Council (U.S.), National Pork Board (U.S.), Livestock Conservation Institute. Bowling Green, KY : Livestock Conservation Institute, c1997. 1 VHS videocassette (36 min.); 1 booklet.

Keywords: Swine, humane handling, pork, meat quality.

Note: Shows proper techniques and procedures for handling pigs to insure high quality meat. Narrative is in both English and Spanish.

NAL Call No.: Videocassette No. 2673.

88

Swine Handling and Transportation [videocassette]. Bowling Green, KY: Livestock Conservation Institute; c1989; ½ " VHS, 21 min.

Keywords: Swine, handling transport, behavior.

Note: This training video explains the basics of swine behavior as it relates to moving and transporting livestock efficiently and humanely. Vision, reaction to noise, flight zone, environmental stimulation, facility design and equipment maintenance are discussed. Other topics include proper loading and unloading, proper transport, bruise reduction, and pork quality preservation.

NAL Call No.: Videocassette No. 1593.

Books, Proceedings, Bibliographies and Articles

Entries listed with NAL Call numbers may be available through interlibrary loan. However, please check your local library first and consult NAL's Document Delivery Services Branch website at <http://www.nal.usda/ddsbr/> for policies and guidelines or e-mail <lending@nal.usda.gov> for additional information.

General

Allen, Tim (1996). **Codes of Practice and International Guidelines on Farm Animal Welfare.**

Fact Sheet, Animal Welfare Information Center, USDA, NAL, Beltsville, MD, 9p.

Keywords: fact sheet, bibliography, lists documents containing codes of practice for swine, dairy, horses, deer, animals used in schools, and rodeos. (Request from AWIC.)

Appleby, M.C. and B.O. Hughes (1997). *Animal Welfare*, CAB International, New York, NY, 316p.

NAL Call No.: HV4711 A587 1997

Keywords: ethics, animal welfare, environment, pain, fear, behavior, preference.

Arave, C.W. (Aug. 1996). **Assessing sensory capacity of animals using operant technology.**

Journal of Animal Science 74(8):1996-2009, ISSN: 0021-8812.

NAL Call No.: 49 J82

Keywords: livestock, animal behavior, training of animals, learning ability, animal welfare, feeding preferences, flavor, color, smell, hearing, light regime, infrared radiation, microwave radiation, animal experiments, literature reviews.

Bartussek, H. (1999). **A review of the animal needs index (ANI) for the assessment of animals' well-being in the housing systems for Austrian proprietary products and legislation.**

Livestock Production Science 61(2/3):179-192, ISSN: 0301-6226.

NAL Call No.: SF1 L5

Keywords: legislation, animal welfare, climate, floors, cattle housing, animal husbandry, reviews, organic farming, environmental factors, light, noise, farmers.

Blokhuis, H.J. (1999). **Integration of animal welfare in intensive animal production.** In:

Production Diseases in Farm Animals: 10th International Conference, Utrecht, Netherlands, 24-28 August 1998, T. Wensing (ed.), p. 222-229, Wageningen Pers: Netherlands, ISBN: 90-74134-60-2.

NAL Call No.: SF854 I57 1998

Keywords: livestock, calves, piglets, weaning, animal welfare, health, production, management, housing, veterinary education, nutrition, reproduction.

Bonneau, M. and B. Laarveld (1999). **Biotechnology in animal nutrition, physiology and health.** *Livestock Production Science* 59(2/3):223-241, ISSN: 0301-6226.

NAL Call No.: SF1 L5

Keywords: livestock, health, nutrition, production, biotechnology, genetic engineering, transgenic animals, vaccines, animal welfare, reviews.

Braastad, B.O. (Dec. 1998). **Effects of prenatal stress on behaviour of offspring of laboratory and farmed mammals.** *Applied Animal Behaviour Science* 61(2):159-180, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: livestock, domestic animals, laboratory mammals, pregnancy, progeny, stress response, young animals, animal behavior, fearfulness, learning ability, sex ratio, sex differences, neurohormonal control, animal welfare, literature reviews.

Cheeke, P. R. (1999). **Contemporary Issues in Animal Agriculture**, Interstate Publishers, Inc., PO Danville, IL, 321p., ISBN: 0-8134-3150-6

Keywords: controversial problems, intensive and extensive animal husbandry, ethical considerations, public health, study questions, literature references.

Cregier, S.E. (1989). **Farm Animal Ethology: A Source Book**, Captus Press: Ontario, Canada, 213p.

NAL Call No.: SF81 C73

Keywords: study of farm animal behavior and welfare, directory, journal listing, funding sources, academia, audiovisuals, conferences, books, reviews.

D'Mello, J.P.F, C.M. Placinta, and A.M.C. Macdonald (Aug. 30, 1999). **Fusarium mycotoxins: A review of global implications for animal health, welfare and productivity.** *Animal Feed Science and Technology* 80(3-4):183-205, ISSN: 0377-8401.

NAL Call No.: SF95 A55

Keywords: livestock, poultry, Fusarium mycotoxicosis toxicity, food contaminant, animal health, animal productivity, animal welfare.

Duncan, I.J.H. (Jan.-Mar. 1993). **The science of animal well-being.** *Animal Welfare Information Newsletter* 4(1):1,4-7, ISSN: 1050-561X.

NAL Call No.: aHV4701 A952

Keywords: keynote address, defining welfare, research, case histories, poultry, cattle.

Evans, B.R. (Jan. 1999). **The prospect for international regulatory interventions in embryo transfer and reproductive technologies in the next century.** *Theriogenology* 51(1):71-80, ISSN: 0093-691X.

NAL Call No.: QP251.A1T5

Keywords: embryos, embryo transfer, regulations, international agreements, disease control, animal genetic resources, ethics.

Ewbank, R., F. Kim-Madslien, and C.B. Hart (1999). *Management and Welfare of Farm Animals: UFAW Farm Handbook, (4th Ed.)*, Universities Federation for Animal Welfare: UK, 308p., ISBN: 1-900630-00-1.

NAL Call No.: SF61 M35 1999

Keywords: husbandry, welfare, production, poultry, cattle, sheep, goats, pigs, rabbits, red deer, fishes, guinea fowls, *Cervus elaphus*, nutrition, breeding.

Federation of Animal Science Societies (January 1999). *Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching*, First Revised Edition, Federation of Animal Science Societies (FASS): Savoy, IL. 90p.

NAL Call No.: QL55.G8 1999

Keywords: policies, guidelines, husbandry, care, welfare, livestock, cattle, horses, poultry, goats, swine, veal calves.

Fraser, A.F. and D.M. Broom (April 1997). *Farm Animal Behaviour and Welfare*, 3rd ed., CAB International, ISBN: 0851991602

Keywords: housing, reproductive behavior, aggression, dominance.

Grandin, Temple (1998). *Genetics and the Behavior of Domestic Animals*, Academic Press: San Diego, CA, 356p.

NAL Call No.: SF756.7 G46 1998

Keywords: behavioral genetics, animal science, animal domestication, fear, handling, restraint, herding, reproductive behavior.

Gregory, Neville G. and Temple Grandin (1998). *Animal Welfare and Meat Science*, CAB International: New York, ISBN:085199296X

Keywords: slaughter, methods, facility design, slaughter-houses.

Hemsworth, Paul H. and Grahame J. Coleman, (1998). *Human-Livestock Interactions the Stockperson and the Productivity and Welfare of Intensively Farmed Animals*, CAB International, New York, NY, 152 p.

NAL Call No.: HV4757.H46 1998

Keywords: livestock, animal welfare, farm animal production.

Houpt, Katherine A. (1998). *Domestic Animal Behavior for Veterinarians and Animal Scientists*, 3rd ed., Iowa State University Press: Ames, IA, 495p.

NAL Call No.: SF756.7 H68 1998

Keywords: aggression, play, reproductive behavior, visual fields, species specific behavior.

Kan, C.J., L.P. Jager, and F.J. Grommers (1998). **Feed additives: do they add to animal welfare? An evaluation.** *Animal Welfare* 7(4): 397-414, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: livestock, feed additives, coccidiostats, adverse effects, animal welfare, anti-infective agents, growth promoters, dosage effects, adrenal glands, pigs, cattle, chickens, literature reviews.

Kolacz, R. and E. Bodak (March 1999). **Welfare of animals and criteria of its evaluation.**

Medycyna Weterynaryjna 55 (3):147-154, ISSN: 0025-8628.

NAL Call No.: 41.8 M463

Keywords: animal health, animal production, animal welfare, economics, emotional reactions, sanitation, stress, welfare evaluation.

Lauderdale, J.W. (Feb. 1999). **What is the pharmaceutical industry doing, and what does the pharmaceutical industry want from animal science departments?** *Journal of Animal Science* 77(2):367-371, ISSN: 0021-8812.

NAL Call No.: 49 J82

Keywords: non-food industries, food safety, environmental protection, sustainability, biotechnology, animal welfare, drug residues, research support, drugs, veterinary products, university research.

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NAL Call No.: HV4704.E84 1998

Keywords: animal welfare, pain, mental stress, species differences, symptoms, stress, literature reviews, livestock, perception, hearing, smell, taste, vision, animal experiments, animal behavior.

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NAL Call No.: 41.8 V641

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Keywords: review, tutorial, databases, drug residues, food contamination, veterinary drugs, United States.

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Keywords: animal welfare, livestock, pigs, hens, broilers, legislation, ethics, consumer attitudes, animal housing, food production, slaughter, abattoirs, transport of animals, stunning, foot diseases.

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NAL Call No.: 49 J82

Keywords: zoology, animal welfare, education, food safety, ethics, agriculture, universities, university research, teaching, extension, environment, animal husbandry, surveys.

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NAL Call No.: BJ52.5.M43

Keywords: agriculture, livestock factories, animal welfare, ethics.

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NAL Call No.: 49 J82

Keywords: bioethics, professional ethics, animal experiments, animal production, biotechnology risk assessment, university research, agricultural colleges.

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NAL Call No.: SF1 L5

Keywords: ethics, livestock, animal production, sustainability, biodiversity, ecology, agricultural research.

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NAL Call No.: HV4890.4 A3C63 No.15

Keywords: Animals Protection Act of 1960, euthanasia, transport, livestock, disabled animals, zoo and circus animals, feral and wild animals, dogs, animal welfare check list.

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Keywords: transport, handling, farm animals, bibliography.

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NAL Call No.: SF5 B74 No. 23

Keywords: transport of animals, animal welfare, livestock, legislation, road transport, stress, animal behavior, heat stress, social behavior, temperature, food, water, poultry, pigs, cattle, sheep, goats, horses.

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NAL Call No.: QL62.5.F68 1995

Keywords: immobilization, handle, restraint.

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NAL Call No.: SF601.V535

Keywords: livestock, handling, stress, movement, behavior, facilities.

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Keywords: cattle, pigs, sheep, floor, lighting, chutes, pens, transport.

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Keywords: downer animals, prevention, cattle, hogs, calves, stockyards.

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Keywords: available through the Livestock Conservation Institute, cattle, hogs, sheep, stress, psychology, handling, bruising.

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Keywords: livestock holding facilities, trucking, preventing injuries, animal movement, meat quality and animal welfare, prods, adequate pen space, facility layout, loading and unloading, flight zone, point of balance, "follow the leader" instinct, excitable hogs, stunning practices, handling of downer livestock.

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Keywords: livestock, animal welfare, stress, animal behavior, guidelines, performance, training, animal husbandry, literature reviews.

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Keywords: handling, large animal practice, veterinarians, zoological gardens, feedlots, ranching, animal welfare, safety, occupational hazards, fearfulness, animal behavior, training of animals, animal husbandry, cow trainers, animal housing, aggression, aggressive behavior, reviews, cattle, Bison, antelopes, horses, *Cervus elaphus canadensis*.

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NAL Call No.: 41.8 M69

Keywords: livestock, handle, husbandry, stockmen, chutes.

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NAL Call No.: TX373.M4

Keywords: meat quality, slaughter, animal welfare, stress, abattoirs, carcass quality, damage, food hygiene, literature reviews, glycogen, muscles, metabolism, handling, fish, pigs, beef cattle.

Harris, T. (1999). **Transport from farm to slaughter.** In: *Farm Animal Welfare, Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK, 1999.* A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), British Society of Animal Science (No. 23): UK, p. 19-23.

NAL Call No.: SF5 B74 No. 23

Keywords: animal welfare, transport of animals, slaughter, legislation, abattoirs, livestock, road transport.

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NAL Call No.: 47.8 W89

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NAL Call No.: 41.8 V641

Keywords: review, animal welfare, cattle, transportation, European Union, pasteurellosis, weight loss.

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NAL Call No.: SF955.E6

Keywords: horse, transport, orientation, animal welfare.

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Keywords: livestock, air transport, animal welfare.

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NAL Call No.: SF5 B74 No. 23

Keywords: abattoirs, animal welfare, legislation, livestock, transport of animals.

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Keywords: extensive bibliography, livestock, poultry, handling, transport, stress, internet resources, policies, organizations.

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NAL Call No.: SF5 B74 No. 23

Keywords: livestock, animal welfare, legislation, animal production.

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NAL Call No.: 41.8 V641.

Keywords: cattle, hydrocortisone, stress, psychological, husbandry, welfare, feces chemistry, transportation.

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NAL Call No.: 49 J82

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Livestock

Cattle

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NAL Call No.: 275.29 Ok41C

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Keywords: lack of individual attention, transportation, dehorning, castration, stanchion tying, separation of cow and calf.

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NAL Call No.: 41.8 Au72

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Keywords: bibliography, handling, husbandry, facilities, care, welfare, well-being, behavior, stress, humane.

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Keywords: bibliography, handling, husbandry, facilities, care, welfare, behavior, stress.

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Keywords: cattle, lameness, treatment, foot diseases, orthopaedics, animal welfare, surgical equipment, claws.

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Keywords: dairy cattle, cows, productivity, attitudes, stockmen, animal behavior, dairy farms, milk yield, trauma, animal welfare, milkers.

Cross, D.E., D.N. Logue, J.E. Offer, L.M. Birnie, and M.A. Lomax (1999). **Does separate housing of newly calved heifers influence social behaviour and lessen claw horn lesion development?** In: *Farm Animal Welfare, Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK*, A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), British Society of Animal Science (No. 23): UK, p.157-158.

NAL Call No.: SF5 B74 No. 23

Keywords: heifers, housing, social behavior, animal welfare, legislation, behavior, stress, foot diseases, claws.

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Keywords: humidity, fertility, husbandry, synchronization, bulls, cows, heat stress.

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Keywords: animal welfare, animal behavior, abnormal behavior, veal calves, cattle housing, animal husbandry.

Gardner, D.L. (Jan. 1999). **Practical and humane methods for bovine euthanasia.** *Veterinary Medicine* 94(1):92-93, ISSN: 8750-7943.

NAL Call No.: 41.8 M69

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NAL Call No.: HV4701.J68

Keywords: calves, restraint of animals, handling, electrical stimulation, animal behavior, chutes, pens, cattle weighers, blood plasma, hydrocortisone, cattle husbandry, liveweight gain, body weight, sex differences, memory, stress response, production costs, animal welfare.

Graf, B. and M. Senn (1999). **Behavioural and physiological responses of calves to dehorning by heat cauterization with or without local anaesthesia.** *Applied Animal Behaviour Science* 62(2/3): 153-171, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: cattle, animal behavior, animal husbandry, animal welfare, dehorning, cautery, injectable anesthetics, lidocaine, stress, blood chemistry, local anesthesia, hormones, vasopressin, corticotropin, hydrocortisone.

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Keywords: cows, cattle, fencing, behavior, vision, movement.

Grandin, T. (1987). **Using cattle psychology to aid handling.** *Agri-Practice* 8(5):32-36.

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Keywords: cattle, handling, behavior, perception, stress, guidelines.

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NAL Call No.: SF601 V484

Keywords: cattle, calves, Friesian, dehorning, analgesics, anesthesia, butorphanol, hydrocortisone, handling, heart rate, xylazine, animal behavior, physiology, heat, animal welfare.

Heerens, S.E. (Aug. 1989). Confinement rearing of calves. [Letter] *Journal of the American Veterinary Association* 195(4):423.

NAL Call No.: 41.8 AM3

Keywords: housing, husbandry, pathogen transmission.

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Keywords: stress, pain, social behavior, physiology, stereotypies.

Hindhede, J., L. Mogensen, and J.T. Sorensen (1999). Effect of group composition and feeding system on behaviour, production and health of dairy heifers in deep bedding systems. *Acta Agriculturae Scandinavica. Section A, Animal Science* 49(4):211-220, ISSN: 0906-4702.

NAL Call No.: S3 A27

Keywords: housing, behavior, health, animal welfare, feed intake, liveweight gain, feeding, cattle feeding, nutrition programmes, heifers, concentrates, dairy herds, group size, animal housing, litter, productivity, aggression, stress, groups.

Hopster, H., J.T.N. van der Werf, J.H.F. Erkens, H.J. Blokhuis (March 1999). Effects of repeated jugular puncture on plasma cortisol concentrations in loose-housed dairy cows. *Journal of Animal Science* 77(3):708-714, ISSN: 0021-8812.

NAL Call No.: 49 J82

Keywords: dairy cows, blood chemistry, blood plasma, hydrocortisone, stress, jugular vein, acclimatization, animal welfare.

Jenkins, E.S. and R.D. Combes (Nov. 1999). The welfare problems associated with using transgenic mice to bioassay for bovine spongiform encephalopathy. *Animal Welfare* 8(4):421-431, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: animal care, philosophy and ethics, rodents, nervous system disease, porter ethical score system, evaluation method, bovine spongiform encephalopathy, bioassay, diagnostic method, duration, severity, animal welfare, distress, pain.

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NAL Call No.: aZ5071.N3

Keywords: cattle, husbandry, welfare, bibliography.

Jensen, D.J.B. (Mar. 1995). **Housing, husbandry, and welfare of dairy cattle: January 1985-March 1995.** *Quick Bibliography Series 91-15*. Animal Welfare Information Center, National Agricultural Library: Beltsville, MD, 99p.

NAL Call No.: aZ5071.N3

Keywords: dairy, animal welfare, housing, husbandry.

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NAL Call No.: QL750.A6

Keywords: dairy cattle, animal welfare, farm management, group housing, environment, locomotor play, novel environment, play behavior, age differences, open-field test, positive feelings, social play, space allowance.

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NAL Call No.: SF1.A56

Keywords: dairy cows, Swedish Red-and-White, milking, feeding, timing, physical activity, rumination, eating, drinking, blood plasma, hydrocortisone, hormone secretion, animal welfare.

Kent, J.E. (July 1999). **Mutilations: a necessary evil? [editorial]** *Veterinary Journal* 158(1):1-3, ISSN 1090-0233.

NAL Call No.: SF601 V484

Keywords: anesthesia, animal welfare, horns, surgery, pain, cattle.

Ketelaar-de Lauwere, C.C., A.H. Ipema, E.N.J. van Ouwerkerk, M.M. Hendriks, J.H.M. Metz, J.P. Noordhuizen, and W.G. Schouten (June 1999). **Voluntary automatic milking in combination with grazing of dairy cows: Milking frequency and effects on behaviour.** *Applied Animal Behaviour Science* 64(2):91-109, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: dairy cattle, Holstein-Friesian, cow, automatic milking system, farm equipment, voluntary automatic milking method.

Kiley-Worthington, M. and H.D. Randle (1999). **The criteria for ethologically and ecologically raised beef.** *Biological Agriculture and Horticulture: an International Journal* 16(4):369-380, ISSN: 0144-8765.

NAL Call No.: S605.5.B5

Keywords: cattle, animal husbandry, alternative farming, ethics, animal welfare, sustainability, nature conservation, suckling, public health, animal behavior, dual purpose cattle, veterinary services, feeding, animal housing, calves, evaluation, beef production.

Kiley-Worthington, M. and H.D. Randle (1999). **The practicalities and economics of ethologically and ecologically raised double suckled beef.** *Biological Agriculture and Horticulture: an International Journal* 16(4):381-393, ISSN: 0144-8765.

NAL Call No.: S605.5.B5

Keywords: beef cattle, economic analysis, ethics, nature conservation, sustainability, organic farming, animal welfare, suckling, animal husbandry, farm management, public health, animal behavior, beef production.

Kilpatrick, D.J. and R.W.J. Steen (1999). **A predictive model for beef cattle growth and carcass composition.** *Agricultural Systems* 61(2):95-107, ISSN: 0308-521X.

NAL Call No.: HD1 A3

Keywords: beef cattle, models, animal welfare, production costs, efficiency, cattle farming, livestock feeding, food quality, information, prediction, food safety, optimization, farm management.

Knowles, T.G. (Feb. 20, 1999). **A review of the road transport of cattle.** *Veterinary Record: Journal of the British Veterinary Association* 144(8):197-201, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: review, animal welfare, cattle, transportation, European Union, pasteurellosis, weight loss.

Knowles, T.G., P.D. Warriss, S.N. Brown, J.E. Edwards (Nov. 1999). **Effect on cattle of transportation by road for up to 31 hours.** *The Veterinary Record: Journal of the British Veterinary Association* 145(20):575-582, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: cattle, animal welfare, road transport, hydrocortisone, animal behavior, blood composition, animal physiology.

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NAL Call No.: 44.8 J822

Keywords: dairy cows, heart rate, monitoring, telemetry, stress response, agonistic behavior, detection, animal welfare.

Lende, T. van der, F.A.M. Loos, de, and T. Jorna (2000). **Postnatal health and welfare of offspring conceived in vitro: a case for epidemiological studies.** *Theriogenology* 53(2):549-554, ISSN: 0093-691X.

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Keywords: epidemiology, in vitro, animal experiments, blastocyst, dairy cattle, fertilization, in vitro culture, livestock, reproduction, culture, embryo transfer, animal welfare.

Logue, D.N., R.J. Berry, J.E. Offer, et al. (1999). **Consequences of "metabolic load" for lameness and disease.** *Cattle Practice* 7(1):113, ISSN: 0969-1251.
NAL Call No.: SF961 C37
Keywords: metabolic disorders, lameness, animal diseases, animal health, animal welfare, dairy cows, behavior.

Lowe, A.G. (1999). **Casualty slaughter, a whole new industry.** *Cattle Practice* 7(4):389-394, ISSN: 0969-1251.
NAL Call No.: SF961 C37
Keywords: slaughter, emergencies, animal welfare, euthanasia.

Margerison, J.K., Phillips, C.J.C., Preston, T.R. (1999). **The effect of cow-calf separation in dairy cattle on animal behaviour.** *Farm Animal Welfare - Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK, 1999.* A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.).
NAL Call No.: SF5 B74 No. 23
Keywords: animal behavior, dairy cattle, animal welfare, livestock, legislation, calves.

McMeekan, C., K.J. Stafford, D.J. Mellor, R.A. Bruce, R.N. Ward, and N. Gregory (1999). **Effects of a local anaesthetic and a non-steroidal anti-inflammatory analgesic on the behavioural responses of calves to dehorning.** *New Zealand Veterinary Journal* 47(3):92-96, ISSN: 0048-0169.
NAL Call No.: 41.8 N483
Keywords: calves, dehorning, responses, analgesics, local anesthesia, pain, animal behavior, non-steroidal anti-inflammatory agents, animal welfare, lidocaine, ketoprofen.

Metz, J.H.M., E. Maltz, T.T. Mottram (1999). **Monitoring health and welfare in practice.** *Cattle Practice* 7(1):123, ISSN: 0969-1251.
NAL Call No.: SF961 C37
Keywords: animal health, animal welfare, diagnosis, cows, milking, mastitis, dairy herds, milk yield.

Miliar, K.M. (2000). **Respect for animal autonomy in bioethical analysis: the case of Automatic Milking Systems (AMS).** *Journal of Agricultural and Environmental Ethics* 12(1):41-50, ISSN: 0893-4282.
NAL Call No.: BJ52.5 J68
Keywords: milking, cows, ethics, robots, animal welfare, animal behavior.

Mogensen, L., C.C. Krohn, and J. Foldager (1999). **Long-term effect of housing method during the first three months of life on human-animal relationship in female dairy cattle.** *Acta Agriculturae Scandinavica. Section A, Animal Science* 49(3):163-171, ISSN: 0906-4702.
NAL Call No.: S3 A27
Keywords: dairy cattle, animal housing, calves, handling, lactation, milk, milk production, milking, pens, cattle housing, animal welfare.

Morisse, J.P., J.P. Cotte, and D. Huonic, and A. Martrenchar (1999). **Influence of dry feed supplements on different parameters of welfare in veal calves.** *Animal Welfare* 8(1):43-52, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: carcass weight, veal calves, rumen motility, behavior, animal welfare, dry feeds, liquid diets, rumen, rumination, hematology.

Nielsen, B.L. (1999). **Perceived welfare issues in dairy cattle, with special emphasis on metabolic stress.** *Cattle Practice* 7(1):97-98, ISSN: 0969-1251.

NAL Call No.: SF961 C37

Keywords: stress, metabolic disorders, animal welfare, dairy cows, dairy farming.

Norgaard, N.H., K.M. Lind, and J.F. Agger (Oct. 1999). **Cointegration analysis used in a study of dairy-cow mortality.** *Preventive Veterinary Medicine* 42(2):98-119, ISSN: 0167-5877.

NAL Call No.: SF601.P7

Keywords: dairy cows, mortality, statistical analysis, intensive, livestock farming, market competition, costs, animal welfare, health, epidemiology, concentrates, feed intake, growth rate, herds, assets, livestock numbers, milk yield.

Palme, R., C. Robia, W. Baumgartner, E. Mostl (Jan. 22, 2000). **Transport stress in cattle as reflected by an increase in faecal cortisol metabolite concentrations.** *Veterinary Record: Journal of the British Veterinary Association* 146(4):108-9, ISSN: 0042-4900.

Keywords: cattle, hydrocortisone, stress, psychological, husbandry, welfare, feces chemistry, transportation.

Payne, M., C.M. Bruhn, B. Reed, A. Scearce, and J. O'Donnell (1999). **On-farm quality assurance programs: a survey of producer and industry leader opinions.** *Journal of Dairy Science* 82(10):2224-2230, ISSN: 0022-0302.

NAL Call No.: 44.8 J822

Keywords: quality controls, animal welfare, animal health, milk marketing, milk, milk quality, milk hygiene, dairy farms, farmers, veterinarians, culling, farm management, dairy farming, food safety, milk processing.

Seabrook, M.F. (1984). **The psychological interaction between the stockman and his animals and its influence on performance of pigs and dairy cows.** *Veterinary Record* 115:84-87.

NAL Call No.: 41.8 V641

Keywords: human-animal bond, fear, handling, behavior.

Sonck, B., Daelemans, J., Langenakens, J. (1999). **Preference test for free stall surface material for dairy cows.** In: *ASAE/CSAE-SCGR Annual International Meeting, Toronto, Ontario, Canada, 18-21 July, 1999*, American Society of Agricultural Engineers (ASAE): St Joseph, USA, 10p.

Keywords: dairy cows, cow housing, housing, cattle housing, litter, rubber, animal welfare, animal behavior.

Stefanowska, J., Tiliopoulos, N.S., Ipema, A.H., Hendriks, M.M.W.B. (April 1999). **Dairy cow interactions with an automatic milking system starting with "walk-through" selection.** *Applied Animal Behaviour Science* 63(3):177-193, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: dairy cows, milking parlors, milking interval, automation, animal behavior, gates, duration, automatic feed, dispensers, concentrates, urination, defecation, animal welfare, use efficiency.

Stull, C. et al, ed. (1993). *Animal Care Series: Dairy Care Practices*, University of California Cooperative Extension Service and the Dairy Workgroup, 48p.

NAL Call No.: SF196 U6D35 1993

Keywords: care, facilities, nutrition, health, handling, transportation, downer, behavior.

Stull, C.L. and D.A. McMartin (Jan. 1992). *Welfare Parameters in Veal Calf Production Facilities*. Prepared for California Legislature, Cooperative Extension Service, University of California School of Veterinary Medicine: Davis, Calif., 31p.

NAL Call No.: SF206 S87 1992

Keywords: veal calves, environment, housing, individual stalls, group pens, diet, health, stress, behavior.

Tennessee, T. and J. Morrigan (Dec. 1999). **Welfare of cull Holstein cows at an abattoir.**

Canadian Journal of Animal Science 79(4):586, ISSN: 0008-3984.

NAL Call No.: 41.8 C163

Keywords: Holstein breed, cull dairy cow, abattoir, animal welfare, avoidance behavior, balking, electric prod, escape behavior, ethology, humane handling, slaughter.

Thomas, C., K.A. Leach, D.N. Logue, C. Ferris, and R.H. Phipps (1999). **Management options to reduce load.** *Cattle Practice* 7(1):121-122, ISSN: 0969-1251.

NAL Call No.: SF961 C37

Keywords: animal health, dairy cattle, cows, metabolism, animal welfare, reproductive performance, management, energy balance.

Thomas, H.S. (1997). *Your Calf: A Kid's Guide to Raising and Showing Beef and Dairy Calves*, Storey Comm. Inc., 192p., ISBN: 0-88266-947-8.

Keywords: feeding, grooming, handling.

Tuckey, J.B. (Sept. 1999). **Slaughter of infant calves [letter].** *Veterinary Record: Journal of the British Veterinary Association* 145(12):352, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: animal welfare, animals, newborn, attitude of health personnel, cattle.

Viator, D.M., P.B. Thompson, M.L. Wolfe, and D. Jones (1999). **UD-R-ALL dairy: a decision case about dairy expansion.** *Journal of Natural Resources and Life Sciences Education* 28(1):9-16, ISSN: 1059-9053.

NAL Call No.: S530 J6

Keywords: dairy farming, farm size, livestock numbers, decision making, teaching materials, environmental impact.

Vos, P. (1999). "The repeat breeder cow," aetiopathogenesis and possible therapies. *Cattle Practice* 7(1):93-95, ISSN: 0969-1251.

NAL Call No.: SF961 C37

Keywords: ovarian cysts, ovarian diseases, female infertility, etiology, pathogenesis, treatment, cows, economics, reproductive disorders, embryo mortality, oestrus, fertilization, calving interval, milk production, animal housing, nutrition, calving, animal health, animal welfare, metabolic disorders, mastitis, lameness, endometritis.

Ward, W.R. (1999). Lameness in dairy cattle, an overview. *Cattle Practice* 7(4):333-340, ISSN: 0969-1251.

NAL Call No.: SF961 C37

Keywords: dairy cattle, reviews, lameness, lesions, foot diseases, dermatitis, animal welfare, pain, economics, risk factors, physiology, locomotion, animal behavior, cattle housing.

Wassmuth, R., F. Wallbaum, and H.J. Langholz (Oct. 1999). **Outdoor wintering of suckler cows in low mountain ranges.** *Livestock Production Science* 61(2-3):193-200, ISSN: 0301-6226.

Keywords: cattle, Limousin x Friesian crossbreds, beef cows, Galloway, cold tolerance, adaptation, animal welfare, livestock system, sustainability, outdoor wintering, low mountain range area, roofed area access.

Watts, J.M. and J.M. Stookey (Feb. 1999). **Effects of restraint and branding on rates and acoustic parameters of vocalization in beef cattle.** *Applied Animal Behaviour Science* 62(2/3):125-135, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: calves, vocalization, branding, restraint of animals, pain, stress response, frequency, animal welfare.

Watts, J.M. and J.M. Stookey (March 2000). **Vocal behaviour in cattle: The animal's commentary on its biological processes and welfare.** *Applied Animal Behaviour Science* 67(1-2):15-33, ISSN: 0168-1591.

Keywords: animal welfare, ethology, human management, vocal behavior, physiological function indicator, psychological function indicator, vocalization, dominance, fitness, isolation, pain expression, reproductive status, sex.

Wilson, L.L., P.A. Nordstrom, M.J. Richards, D.L. Smith, K.J. Vandergrift (March 1999). **Dairy and veal producer assessment of changes in care, handling, and transportation factors.** *The Professional Animal Scientists* 15(1):24-33, ISSN: 1080-7446.

NAL Call No.: SF51.P76

Keywords: dairy cows, veal calves, calf production, milk production, cattle husbandry, artificial rearing, livestock numbers, transport of animals, stress management, loss prevention, animal health, welfare, ventilation.

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NAL Call No.: 49 J82

Keywords: calves, young animals, Holstein, animal housing, stress, veal calves, basophils, blood serum, hydrocortisone, eosinophils, glycoproteins, grooming, leukocytes, monocytes, neutrophils, tethered housing, cattle housing, animal welfare, animal experiments, hematology, blood chemistry, calf housing, stalls, pens, cubicles.

Horses

Blackshaw, J.K., D. Kirk, and S.E. Cregier (Apr./Jun. 1983). **A different approach to horse handling, based on the Jeffery method.** *International Journal for the Study of Animal Problems* 4(2):117-123.

NAL Call No.: HV4701.I49

Keywords: behavior, flight distance principle, human-animal bond, mutual confidence.

Calvin, N., Kobluk, C.N., T.R. Ames, and R.J. Geor, eds. (1995). **The Horse: Diseases and Clinical Management** W.B. Saunders: Philadelphia, Penn. 1335p.

NAL Call No.: SF951.H78 1995

Keywords: disease, care, treatment, symptoms, management.

Fraser, A.F. (1992). **The behaviour of the horse** Wallingford, Ox, UK: CAB International, 288 p., ISBN: 0851987850

NAL Call No.: SF281 F72 1992

Keywords: evolutionary and neurological basis of behavior, welfare, training, husbandry, sleep, feeding, reproduction, abnormal behaviors, literature review.

Charter, N. (1999). **Importance and prospects for control of streptococcal infections of the horse.** In: *Equine infectious diseases VIII: Proceedings of the Eighth International Conference, Dubai, 23rd-26th March 1998*, U. Wernery, J.F. Wade, J.A. Mumford, and O.R. Kaaden (eds.), R & W Publications (Newmarket) Ltd: Newmarket, UK, p. 76-81, ISBN: 1-899772-05-7.

Keywords: epidemiology, outbreaks, animal welfare, sudden death, respiratory diseases, endometritis, placentitis, abortion, treatment, vaccines, disease control, disease prevention, disease transmission, *Streptococcus equi*.

Clark, J.O. and T.P. Clark (Dec. 1999). **Analgesia**. *Veterinary Clinics of North America: Equine Practice* 15(3):705-23, ISSN: 0749-0739.

Keywords: analgesics therapeutic use, horse diseases, drug therapy, pain, adrenergic alpha-agonists, opioids, anti-inflammatory agents.

Cook, W.R. (March 1999). **Pathophysiology of bit control in the horse**. *Journal of Equine Veterinary Science* 19(3):196-204, ISSN: 0737-0806.

NAL Call No.: SF951.J65

Keywords: horses, equipment, complications, exercise, horse riding, animal anatomy, guidelines, animal welfare, animal health, physiopathology, training of animals, air flow, position, gait, abnormal behavior.

Freeman, D. (Oct./Dec. 1995). **Individual management key--part of sound horse growth**. *OSU Equine News*, Cooperative Extension Service, Department of Animal Science: Stillwater, Okla., p. 1-2.

NAL Call No.: SF277.O88

Keywords: growth, nutrition, exercise, disorders, husbandry.

Freeman, D.A., N.F. Cymbaluk, H.C. Schott II, K. Hinchcliff, S.M. McDonnell, and B. Lyle (Nov. 1999). **Clinical, biochemical, and hygiene assessment of stabled horses provided continuous or intermittent access to drinking water**. *American Journal of Veterinary Research* 60(11):1445-1450, ISSN: 0002-9645.

NAL Call No.: 41.8 Am3A

Keywords: mares, drinking water, water intake, animal welfare, animal health, body temperature, appetite, urine, hygiene, dehydration, drinkers.

Gall, C. (Oct. 15, 1999). **Opinion on use of prerace inspection [letter]**. *Journal of the American Veterinary Medical Association* 215(8):1092-3, ISSN 0003-1488.

Keywords: horses injuries, animal welfare, athletic injuries, mass screening, prevention and control, risk factors.

Grandin, T., K. McGee, and J. Lanier (1999). **Incidence of severe welfare problem in horses arriving at slaughter**. *Journal of Animal Science* 77(Suppl.1):145, ISSN: 0021-8812

Keywords: animal welfare, slaughterhouse arrival, carcass characteristics, abstract.

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NAL Call No.: 41.8 Am3

Keywords: horses, animal welfare, incidence, transport of animals, abattoirs, body condition, trauma.

Greene, E.A. (1997). **Developing animal welfare as a habit in our youth**. In: *Proceedings of the Fifteenth Equine Nutrition and Physiology Symposium, Fort Worth, Texas, USA, 28-31 May, 1997*, Washington State University: Pullman, WA, p. 183-184.

Keywords: animal welfare, youth, education, horses.

Hayes, Karen E.N. (1995). *Emergency! The Active Horseman's Book of Emergency Care* Half Halt Press: Boonsboro, MD, 213p.
NAL Call No.: SF951.H325 1995
Keywords: care, emergencies, first aid.

Hill, Cherry (1997). *Horse Health Care a Step-By-Step Photographic Guide to Mastering over 100 Horsekeeping Skills* Storey Communications: Pownal, VT, 151 p.
NAL Call No.: SF285.3.H54 1997
Keywords: care, feeding, grooming.

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NAL Call No.: SF411.A57
Keywords: aggression, behavior, handling, care, treatment, welfare.

Humane Slaughter Association (1999). *Farewell: Making the Right Decision (destruction of horses)*. Humane Slaughter Association: Wheathampstead, UK, 14p., ISBN: 1-871561-06-X.
Keywords: slaughter, animal welfare, destruction of animals, carcass disposal, euthanasia.

Jordan, R.M. (1990). *Horse Care and Management* Publication no. AG-BU-0484, University of Minnesota, Department of Animal Science, Minnesota Extension Service, 20p.
NAL Call No.: SF285 J67 1990
Keywords: health, shoeing, training, grooming, showing, safety.

Knottenbelt, D.C. (July 10, 1999). Chemical destruction of horses [letter]. *Veterinary Record* 145: (2):54-55, ISSN: 0042-4900.
Keywords: animal welfare, euthanasia veterinary, barbiturates, administration and dosage, dehydration, veterinary medicine, methods and standards.

Korioth, T.I. (Feb. 2000). Welfare of equids ever-evolving. *Journal of the American Veterinary Medical Association* 216(3):319-22, ISSN: 0003-1488.
Keywords: animal welfare, horses, United States.

Luba, N.K. (Summer 1999). PMU ranching demonstrates benefits of self-regulation. *Animal Welfare Information Center Bulletin* 10(1/2):7-9, ISSN: 1522-7553.
NAL Call No.: aHV4701.A952
Keywords: mares, urine, PMSG, pregnancy, animal welfare, inspection, collection, crossbreeding, foals.

McDonnell, S.M., D.A. Freeman, N.F. Cymbaluk, H.C. Schott II, K. Hinchcliff, and B. Kyle (Nov. 1999). **Behavior of stabled horses provided continuous or intermittent access to drinking water.** *American Journal of Veterinary Research* 60(11):1451-1456, ISSN: 0002-9645.

NAL Call No.: 41.8 Am3A

Keywords: horses, drinking water, water intake, animal behavior, animal welfare, drinkers.

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NAL Call No.: SF287 M58 1991

Keywords: foal behavior, shaping, imprinting, methods.

Mills, D.S. and K.J. Nankervis (1999). ***Equine behaviour: principles and practice.*** Blackwell Science Ltd.: Oxford, UK, 232p., ISBN: 0-632-04878-6.

Keywords: animal welfare, horses, ethics, animal behavior.

Parelli, Pat, K. Kadash and K. Parelli (1993). ***Natural Horse-Man-Ship.*** Western Horseman, ISBN:0911647279.

Keywords: prey animal psychology, behavior, horse/human relationship, humane training techniques, safe horse handling.

Rossdale, P.D., T.R.C. Greet, Harris, P.A., R.E. Green, and S. Hall (1999). ***Guardians of the Horse: Past, Present and Future.*** Romney Publications: Newmarket, UK, 324p., ISBN: 0-9528566-5-4.

Keywords: veterinary medicine, animal welfare, racehorses, animal health, horse diseases, animal husbandry.

Smith, C.P. (1994). **Housing, husbandry, and welfare of horses: January 1988-January 1994. Quick Bibliography Series 94-22**, U.S. Department of Agriculture, National Agricultural Library: Beltsville, MD, 62p.

NAL Call No.: aZ5071.N3 No.94-22

Keywords: bibliography, flooring, stress, housing design, ventilation, temperature control, transport, social environment.

Smith, C.P. and D.J.B. Jensen (1995). **Housing, husbandry, and welfare of horses: January 1988-July 1995. Quick Bibliography Series 95-20**, National Agricultural Library: Beltsville, MD, 62p.

NAL Call No.: aZ5071.N3

Keywords: housing, husbandry, behavior, welfare, bibliography.

Stull, C.L. (1999). **Responses of horses to trailer design, duration, and floor area during commercial transportation to slaughter.** *Journal of Animal Science* 77(11): 2925-2933, ISSN: 0021-8812.

Keywords: transport of animals, body condition, leukocyte count, hydrocortisone, dehydration, hematocrit, trauma, muscles, muscle fatigue, stress, weight losses, road transport, livestock transporters, trailers, handling, animal welfare, slaughter.

Tobin, T., J.D. Harkins, and R.A. Sams (June 1999). Testing for therapeutic medications: analytical/pharmacological relationships and "limitations" on the sensitivity of testing for certain agents. *Journal of Veterinary Pharmacology and Therapeutics* 22(3):220-233, ISSN: 0140-7783.

NAL Call No.: SF915.J63

Keywords: veterinary products, drugs, testing, drug residues, racehorses, literature reviews, animal welfare.

Whiting, T. (March 1999). Maximum loading density of loose horses. *Canadian Journal of Animal Science* 79(1):115-118, ISSN: 0008-3984.

NAL Call No.: 41.8 C163

Keywords: horses, transport of animals, stocking density, crowding, floor space, space requirements, calculation, trailers, weight, transit time, animal welfare.

Whiting, T.L. and R.A. Sauder (2000). Headroom requirements for horses in transit. *The Canadian Veterinary Journal* 41(2):132-133, ISSN: 0008-5286.

NAL Call No.: 41.8 R3224

Keywords: horses, transport of animals, space requirements, animal welfare, horse breeds, livestock transporters, height, head, withers, guidelines.

Poultry

Appleby, Michael C., Barry O. Hughes, and Arnold H. Elson (1992). *Poultry Production Systems: Behaviour, Management and Welfare* C.A.B International: Oxon, U.K., 238p.

NAL Call No.: SF487 A77 1992

Keywords: housing, husbandry, feeding, nesting, caging.

Appleby, M.C. and S.F. Smith (1991). Design of nest boxes for laying cages. *British Poultry Science* 32(4):667-678.

NAL Call No.: 47.8 B77

Keywords: wire floor nest box, rollaway nest box, egg production, nesting behavior, space, cage, nest box, hens.

Barnett, J.L. (1999). Welfare and productivity of hens in a barn system and cages. In: *Proceedings 1999 Australian Poultry Science Symposium Volume No. 11*, University of Sydney: Sydney, NSW, D.J. Farrell (ed.), 65-68.

Keywords: cages, animal welfare, hens, poultry housing, egg production, animal husbandry.

Bilgili, S.F. (Feb. 1999). Recent advances in electrical stunning. *Poultry Science* 78(2):282-6, ISSN: 0032-5791.

NAL Call No.: 47.8 Am33P

Keywords: abattoirs, food technology, trends, meat, standards, poultry, animal welfare, electric stimulation, mortality, postmortem changes.

Campo, J.L., M.G. Gil, I. Munoz, and M. Alonso (April 2000). Relationships between bilateral asymmetry and tonic immobility reaction or heterophil to lymphocyte ratio in five breeds of chickens. *Poultry Science* 79 (4):453-459, ISSN: 0032-5791.

NAL Call No.: 47.8 Am33P

Keywords: chicken, breeds, Barred Red, Buff Prat, Castellana, Castellana x Buff Prat, Red Villafranquina, heterophil blood and lymphatics, immune system, lymphocyte blood and lymphatics, immune system, animal welfare status, bilateral asymmetry, breed differences, morphological traits, tonic immobility reaction.

Canadian Federation of Humane Societies, Coordinator (1990). *Recommended Code of Practice for the Care and Handling of Poultry from Hatchery to Processing Plant*. Publication 1757/E. Agriculture Canada: Ottawa, Ontario, Canada, 54p.

NAL Call No.: 7 C16Pu 1757/E.

Keywords: poultry, hatcheries, layers, broilers, turkeys, housing, handling, nutrition, animal, protection, sanitation, social environment, transport, processors.

Carmichael, N.L., A.W. Walker, and B.O. Hughes (May 1999). Laying hens in large flocks in a perchery system: influence of stocking density on location, use of resources and behaviour. *British Poultry Science* 40(2):165-176, ISSN: 0007-1668.

NAL Call No.: 47.8 B77

Keywords: hens, stocking density, spatial distribution, perches, litter, nests, floors, nipple drinkers, rest, diurnal variation, physical activity, dust bathing, foraging, eating, drinking, grooming, nesting, animal behavior, animal welfare.

Cheever, H. (Nov. 1999). AVAR's concerns about forced molting [letter]. *Journal of the American Veterinary Medical Association* 215(9):1236, ISSN: 0003-1488.

NAL Call No.: 41.8 Am3

Keywords: chickens, animal welfare, physiology, food deprivation, molting, poultry diseases physiopathology, starvation, poultry diseases.

Church, J.S., T. Tennessen, and A.B. Webster (1992). Environmental enrichment influences on body weight, feathering, foot condition and behaviour of caged white leghorn hens. *Journal of Animal Science* 70(Suppl. 1):175.

NAL Call No.: 49 J82

Keywords: fear, stress, battery cages, cage enrichment, cage, hens, body weight, behavior.

Davis, N.J., N.B. Prescott, C.J. Savory, and C.M. Wathes (1999). Preferences of growing fowls for different light intensities in relation to age, strain and behaviour. *Animal Welfare* 8(3):193-203, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: poultry, broilers, strains, strain differences, animal behavior, light, animal housing, environment, animal welfare, age differences, light intensity.

Dawkins, M.S. (1999). The role of behaviour in the assessment of poultry welfare. *World's Poultry Science Journal* 55(3):295-303, ISSN: 0043-9339.

Keywords: poultry, animal behavior, animal welfare.

Elhussein, H. and H. van den Weghe (1999). **The effect of internal parameter on the dust concentration in broiler houses.** *Landtechnik* 54 (5):302-303, ISSN: 0023-8082.

Keywords: environmental dust, poultry housing, lighting, animal behavior, animal welfare, broilers.

Fletcher, D.L. (Feb. 1999). **Slaughter technology.** *Poultry Science* 78(2):277-81, ISSN 0032-5791.

NAL Call No.: 47.8 Am33P

Keywords: abattoirs, food technology, trends, meat, standards, poultry, animal welfare, electric stimulation, mortality, postmortem changes.

Freire, R., A. Walker, and C.J. Nicol (March 1999). **The relationship between trough height, feather cover and behaviour of laying hens in modified cages.** *Applied Animal Behaviour Science* 63(1):55-64, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: hens, feathers, feed troughs, height, feeding frequency, feather pecking, animal welfare, age differences, dust bathing, posture.

Gordon, S.H. (1992). **The effect of broiler stocking density on bird welfare and performance.** *British Poultry Science* 33(5):1120-1121.

NAL Call No.: 47.8 B77

Keywords: housing, substrate, flock management, production, broilers, welfare.

Gregory, N.G. and C.D. Devine (July 1999). **Body condition in end-of-lay hens: some implications.** *Veterinary Record: Journal of the British Veterinary Association* 145(2):49, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: chickens, eggs, animal husbandry, animal welfare, body composition, weight loss.

Gregory, N.G., J.K. Robins, and T.A. Stewart (1999). **Blood spots in chicken meat after slaughter, a humane alternative.** *New Zealand Veterinary Journal* 47(2):77-78, ISSN: 0048-0169.

NAL Call No.: 41.8 N483

Keywords: slaughter, meat quality, animal welfare, poultry.

Guarino, M., A. Caroli, P. Navarotto (1999). **Dust concentration and mortality distribution in an enclosed laying house.** *Transactions of the ASAE* 42(4):1127-1133, ISSN: 0001-2351.

NAL Call No.: 290.9 Am32T

Keywords: air quality, poultry housing, dust, animal welfare, mortality, battery cages, ventilation.

Gunnarsson, S., L.R. Matthews, T.M. Foster, W. Temple (Jan. 2000). **The demand for straw and feathers as litter substrates by laying hens.** *Applied Animal Behaviour Science* 65(4):321-330, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: hens, litter, barley straw, feathers, nesting, dust bathing, demand, animal welfare.

Harrison, R. (Oct. 1999). **Electrical stunning of poultry [letter].** *Veterinary Record: Journal of the British Veterinary Association* 145(17):503-4, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: animal welfare, poultry, unconsciousness, abattoirs, electric stimulation.

Hocking, P.M., M.H. Maxwell, and M.A. Mitchell (March 1999). **Welfare of food restricted male and female turkeys.** *British Poultry Science* 40(1):19-29, ISSN: 0007-1668.

NAL Call No.: 47.8 B77

Keywords: turkeys, line differences, restricted feeding, unrestricted feeding, physical activity, blood picture, blood plasma, corticosterone, age differences, lactate dehydrogenase, enzyme activity, aspartate aminotransferase, alkaline phosphatase, animal welfare, body weight, feed intake, animal behavior, creatine kinase.

Hocking, P.M., R. Bernard, and M.H. Maxwell (1999). **Assessment of pain during locomotion and the welfare of adult male turkeys with destructive cartilage loss of the hip joint.** *British Poultry Science* 40(1):30-34, ISSN: 0007-1668.

NAL Call No.: 47.8 B77

Keywords: pain, stress, joint diseases, male animals, betamethasone, restricted feeding, animal husbandry, feeding, animal welfare, poultry.

Hoentjen, T. and J. Lankhaar (Feb. 1999). **Controlled atmosphere stunning of poultry.** *Poultry Science* 78(2):287-289, ISSN: 0032-5791.

NAL Call No.: 47.8 Am33P

Keywords: poultry, stunning, electric current, carbon dioxide, nitrogen, oxygen, argon, anoxia, broilers, slaughter, carcass quality.

Hopley, P.T. (1999). **Striking the balance: a chicken meat producer's view.** In: *Farm Animal Welfare - Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science*, Edinburgh, UK, 1999. A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), p. 11-13.

NAL Call No.: SF5 B74 No. 23

Keywords: poultry, broilers, animal welfare, chicken meat.

Huber-Eicher, B. (1999). **A survey of layer-type pullet rearing in Switzerland.** *World's Poultry Science Journal* 55(1):83-91, ISSN: 0043-9339.

NAL Call No.: 47.8 W89

Keywords: animal welfare, hens, poultry housing, pullets, feather pecking, animal husbandry.

Hulet, R.M., D.M. Denbow, and R.W. Manley (1991). **Effect of bird density on growth performance of cage-brooded male and female turkeys.** *Poultry Science* 70 (Suppl. 1): 54.

NAL Call No.: 47.8 AM33P

Keywords: group size, body weight, industry, turkeys, cage.

Humane Slaughter Association (1999). *Code of Practice for the Disposal of Chicks in Hatcheries*, Humane Slaughter Association: Wheathampstead, UK, 13p., ISBN: 1-871561-12-4.

Keywords: broilers, slaughter, animal welfare, chicks, legislation, carcass disposal, poultry, ducks, fowls, geese, turkeys.

Jones, R.B. and N.L. Carmichael (1999). **Can "environmental enrichment" affect domestic chickens' preferences for one half of an otherwise symmetrical home cage?** *Animal Welfare* 8(2):159-164, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: animal behavior, animal housing, animal welfare, chicks, environmental assessment, cages, poultry housing, enrichment.

Jones, R.B. and N.L. Carmichael (1999). **Responses of domestic chicks to selected pecking devices presented for varying durations.** *Applied Animal Behaviour Science* 64(2):125-140, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: animal welfare, chicks, environment, animal behavior, stimuli, enrichment.

Jones, R.B. and P.M. Hocking (Nov. 1999). **Genetic selection for poultry behaviour: Big bad wolf or friend in need?** *Animal Welfare* 8(4):343-359, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: adrenocortical responsiveness, animal welfare, fearfulness, feather pecking, genetic selection program, growth rate, poultry behavior, productivity, selective breeding, social stress, sociality, literature review.

Jones, R.B. and A.D. Mills (1999). **Divergent selection for social reinstatement behaviour in Japanese quail: effects on sociality and social discrimination.** *Poultry and Avian Biology Reviews* 10(4):213-223.

NAL Call No.: QL698 C7

Keywords: animal behavior, social behavior, reviews, animal welfare, stress, selection.

Klober, K. (June 1995). **Loose housing for poultry.** *Small Farm Today* 12(3):24-25.

NAL Call No.: S1.M57

Keywords: housing, small farms.

Kreger, M.D. (Feb. 1995). **Housing, husbandry, and welfare of poultry: January 1992-January 1995.** *Quick Bibliography Series (95-05)*, National Agricultural Library: Beltsville, MD, 74p.

NAL Call No.: aZ5071.N3

Keywords: poultry, housing, husbandry, welfare, bibliography.

Kreger, M.D. (1994). **Housing, husbandry, and welfare of poultry, January 1991-January 1994.** *Quick Bibliography Series 94-26* U.S. Department of Agriculture, National Agricultural Library: Beltsville, MD, 30p.

NAL Call No.: aZ5071.N3

Keywords: husbandry, bibliography, housing, behavior, physiology.

Kreger, M.D. (1994). **Housing, husbandry, and welfare of selected birds (quail, pheasant, finches, ostrich, dove, parrot), December 1980-December 1993.** *Quick Bibliography Series 94-26* U.S. Department of Agriculture, National Agricultural Library: Beltsville, MD, 30p.

NAL Call No.: aZ5071.N3

Keywords: husbandry, bibliography, housing, behavior, physiology.

Lambooij, E., M.A. Gerritzen, B. Engel, S.J.W. Hillebrand, J. Lankhaar, and C. Pieterse (Feb. 1999). **Behavioural responses during exposure of broiler chickens to different gas mixtures.** *Applied Animal Behaviour Science* 62(2/3):255-265, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: broilers, stunning, argon, carbon dioxide, air, oxygen, nitrogen, mixtures, restraint of animals, animal welfare, animal behavior, anoxia.

LeVan, N.F., I. Estevez, and W.R. Stricklin (2000). **Use of horizontal and angled perches by broiler chickens.** *Applied Animal Behaviour Science* 65(4):349-365, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: broilers, poultry, perches, poultry housing, animal welfare, animal behavior.

Luijtelaar, G. van, Z. Li, and A. Coenen (1999). **Inhalation euthanasia in broiler chickens.**

World Poultry 15(11):40-43.

NAL Call No.: 47.8 P8644

Keywords: broilers, poultry, euthanasia, inhalation, stunning, stress, animal welfare, carbon dioxide, nitrogen.

Martrenchar, A. (June 1999). **Animal welfare and intensive production of turkey broilers.**

World's Poultry Science Journal 56(2):143-152, ISSN: 0043-9339.

NAL Call No.: 47.8 W89

Keywords: turkeys, animal welfare, stocking density, transport of animals, slaughter, intensive production, growth rate, artificial selection, sexual reproduction, photoperiod, age, air quality, abnormal behavior, gait, literature reviews.

Martrenchar, A., D. Huonic, J.P. Cotte, E. Boilletot, J.P. Morisse (July 1999). **Influence of stocking density on behavioral, health and productivity traits of turkeys in large flocks.** *British Poultry Science* 40(3):323-331, ISSN: 0007-1668.

NAL Call No.: 47.8 B77

Keywords: turkeys, stocking density, animal behavior, animal welfare, performance, health, poultry housing, gait, lesions, wounds, liveweight, frequency.

Moller, A.P., G.S. Sanotra, K.S. Vestergaard (1999). **Developmental instability and light regime in chickens (*Gallus gallus*).** *Applied Animal Behaviour Science* 62(1):57-71, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: development, light, stress, ontogeny, abnormal development, environmental factors, genetic effects, animal behavior, animal welfare, dyschondroplasia, lighting, poultry.

Mouchoniere, M., G. le Pottier, X. Fernandez (1999). **The effect of current frequency during waterbath stunning on the physical recovery and rate and extent of bleed out in turkeys.** *Poultry Science* 78(3):485-489, ISSN: 0032-5791.

NAL Call No.: 47.8 Am33P

Keywords: consciousness, stunning, electric current, slaughter, cardiomyopathy, animal welfare, electronarcosis, electricity, frequency, meat quality, poultry.

Newberry, R.C. (1999). **Exploratory behaviour of young domestic fowl.** *Applied Animal Behaviour Science* 63(4):311-321, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: animal behavior, broilers, young animals, animal welfare, stimuli, motivation, exploration, poultry housing, poultry.

Newberry, R.C., A.B. Webster, N.J. Lewis, C. Van Arnam (1999). **Management of spent hens.** *Journal of Applied Animal Welfare Science: JAAWS* 2(1):13-29, ISSN: 1088-8705.

NAL Call No.: HV4701.J68

Keywords: hens, capture of animals, osteoporosis, bone strength, bone fractures, pain, transport of animals, slaughter, on-farm, processing, stunning, gases, animal welfare.

Nicol, C.J., N.G. Gregory, T.G. Knowles, I.D. Parkman, and L.J. Wilkins (Oct. 1999).

Differential effects of increased stocking density, mediated by increased flock size, on feather pecking and aggression in laying hens. *Applied Animal Behaviour Science* 65(2):137-152, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: hens, stocking density, group size, plumage, feather pecking, age differences, social dominance, animal welfare, laying performance, perches, nests, floors, aggressive behavior.

Niekerk, T. van, and B. Reuvekamp (1999). **Enriched cages for laying hens.** *World Poultry* 15(12):34-37.

NAL Call No.: 47.8 P8644

Keywords: cages, hens, poultry, poultry housing, animal welfare, legislation, litter, floors, enrichment.

Poultry Science Association and R.D. Reynnells. (October 1998)). **Poultry Science Resource List and Rabbit Resource List** Savoy, IL. (copies currently available from AWIC).

NAL Call No.: SF481.25 P68

Keywords: university, commodity groups, government contacts, experts listed by state and area of interest.

Rath, N.C., J.M. Balog, W.E. Huff, G.R. Huff, G.B. Kulkarni, and J.F. Tierce (Aug. 1999).

Comparative differences in the composition and biomechanical properties of tibiae of seven- and seventy-two-week-old male and female broiler breeder chickens. *Poultry Science* 78(8):1232-9, ISSN: 0032-5791.

NAL Call No.: 47.8 Am33P

Keywords: bone development, bone matrix, growth and development, animal welfare, biomechanics, collagen metabolism, pyridinium compounds.

Savory, C.J. and J.S. Mann (1999). **Feather pecking in groups of growing bantams in relation to floor litter substrate and plumage colour.** *British Poultry Science* 40(5):565-572, ISSN: 0007-1668.

NAL Call No.: 47.8 B77

Keywords: plumage, feces, feathers, peat, pens, poultry housing, animal behavior, animal welfare, color, litter, feather pecking, poultry.

Sherwin, C.M. (1999). **Domestic turkeys are not averse to compact fluorescent lighting.**

Applied Animal Behaviour Science 64(1):47-55, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: fluorescent light, fluorescence, illumination, artificial light, animal husbandry, poultry housing, animal welfare, animal behavior.

Sherwin, C.M., P.D. Lewis, and G.C. Perry (1999). **The effects of environmental enrichment and intermittent lighting on the behaviour and welfare of male domestic turkeys.**

Applied Animal Behaviour Science 62(4):319-333, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: animal behavior, aggression, vices, light, poultry housing, animal welfare, trauma, blindness, muscular diseases, turkeys.

Solomon, S.E. (March 1999). **An egg ist ein ei, es un huevo, est un oeuf.** *British Poultry Science* 40(1):5-10, ISSN: 0007-1668.

NAL Call No.: 47.8 B77

Keywords: egg shell, hens, calcium carbonate, line differences, egg shell quality, ultrastructure, age differences, calcite, animal welfare.

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Keywords: animal welfare, leg weakness, lameness, hereditary diseases, disease prevention, disease control, broilers, poultry.

Tauson, R., A. Wahlstrom, and P. Abrahamsson (1999). **Effect of two floor housing systems and cages on health, production, and fear response in layers.** *The Journal of Applied Poultry Research* 8(2):152-159, ISSN: 1056-6171.

NAL Call No.: SF481.J68

Keywords: hens, chicken housing, battery cages, aviaries, floor pens, floor type, wire netting, litter, wood shavings, nests, laying performance, mortality, fearfulness, egg weight, feed intake, feed conversion, body weight, breed differences, egg quality, plumage, feather pecking, wounds, foot diseases, sternum, animal welfare, animal health.

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NAL Call No.: 47.8 AR2

Keywords: cages, hens, poultry, egg production, chicken housing, animal welfare, animal behavior.

Thaler, A.M. (Feb. 1999). **The United States perspective towards poultry slaughter.** *Poultry Science* 78(2):298-301, ISSN: 0032-5791.

NAL Call No.: 47.8 Am33P

Keywords: poultry, slaughter, stunning, legislation, animal welfare.

Tserveni-Gousi, A.S., A.B.M. Raj, and M. O'Callaghan (1999). **Evaluation of stunning/killing methods for quail (*Coturnix japonica*): bird welfare and carcase quality.** *British Poultry Science* 40(1):35-39, ISSN: 0007-1668.

NAL Call No.: 47.8 B77

Keywords: animal welfare, carcass quality, meat quality, argon, carbon dioxide, experiments, consciousness, pain, carcasses, stunning, hemorrhage, fractures, electronarcosis, toxic gases, slaughter, poultry.

Uijttenboogaart, T.G. (Feb. 1999). **European perspective on poultry slaughter technology.**

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NAL Call No.: 47.8 Am33P

Keywords: poultry, transport of animals, European Union regulations, stress, animal welfare, stunning, aging, meat quality, chicken meat, chilling.

Vestergaard, K.S., G.S. Sanotra (Feb. 1999). **Relationships between leg disorders and changes in the behaviour of broiler chickens.** *The Veterinary Record: Journal of the British Veterinary Association* 144(8):205-209, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: broilers, legs, lameness, dyschondroplasia, behavior change, dust bathing, immobilization, animal welfare, sand, straw.

Warriss, P.D., T.G. Knowles, S.N. Brown, et al. (Aug. 21, 1999). **Effects of lairage time on body temperature and glycogen reserves of broiler chickens held in transport modules.** *The Veterinary Record: Journal of the British Veterinary Association* 145(8):218-222, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: broilers, slaughter, transport of animals, time, body temperature, glycogen, liver, winter, summer, animal welfare.

Webster, A.B. (Feb. 2000). **Behavior of white leghorn laying hens after withdrawal of feed.** *Poultry Science* 79(2):192-200, ISSN: 0032-5791.

NAL Call No.: 47.8 Am33P

Keywords: animal welfare, behavior, animal, chickens, food deprivation, body composition, housing, animal, molting, weight loss.

Weeks, C.A., T.D. Danbury, H.C. Davies, P. Hunt, and S.C. Kestin (March 2000). **The behaviour of broiler chickens and its modification by lameness.** *Applied Animal Behaviour Science* 67(1-2):111-125, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: broiler chickens, activity pattern, animal welfare, eating, gait score, lameness (leg weakness), lying, preening, soundness, standing, walking.

Whitehead, C.C. (1999). **Reducing osteoporosis in laying hens.** *World Poultry* 15(9):78-82.

NAL Call No.: 47.8 P8644

Keywords: hens, poultry, osteoporosis, nutrition, genetics, breeding, animal husbandry, housing, cages, animal welfare, bones, fractures, bone diseases, exercise.

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NAL Call No.: DISS F1999107

Keywords: thesis, animal welfare, hens, vocalization, animal behavior, indicators, poultry.

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NAL Call No.: 47.8 Am33P

Keywords: animal welfare, poultry, ascorbic acid, administration and dosage, pharmacology, lymphocyte subsets, abattoirs, behavior, animal, posture, stress, slaughter.

Rabbits

Allen, Tim (1994) **Housing, husbandry and welfare of rabbits.** *Quick Bibliography Series 94-16*, U.S. Department of Agriculture, National Agricultural Library: Beltsville, MD, 45p.

NAL Call No.: aZ5071.N3 No.94-16

Keywords: welfare, feeding, housing, social groups, environmental enrichment.

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NAL Call No.: QL55.I5

Keywords: social groups, solitary housing, space, behavior, environmental enrichment, group housing.

Brooks, D.L., W. Huls, C. Leamon, J. Thomson, J. Parker, and S. Twomey (May 1993). **Cage enrichment for female New Zealand White rabbits.** *Lab Animal* 22(5):30-38.

NAL Call No.: QL55 A1L33

Keywords: paired housing, single housing, enrichment objects, behavior, social contact.

Harkness, J.E. (1988). **Rabbit behavior as related to environmental stress.** *Journal of Applied Rabbit Research* 11(3):227-236.

NAL Call No.: QL737 L32J6

Keywords: ambient temperature, photoperiod, spatial needs, stress, social behavior, acoustic environment.

Morton, D.B., M. Jennings, G.R. Batchelor, D. Bell, L. Birke, K. Davies, J.R. Eveleigh, D. Gunn, M. Heath, B. Howard, P. Koder, J. Phillips, T. Poole, A.W. Sainsbury, G.D. Sales, D.J.A. Smith, M. Stauffacher, and R.J. Turner (Oct. 1993). **Refinements in rabbit husbandry: Second report of the BVAWF/FRAME/RSPCA/UFAW Joint working group on refinement.** *Laboratory Animals* 27(4):301-329.

NAL Call No.: QL55 A1L3

Keywords: welfare, husbandry, housing, density, environmental enrichment, breeding, health, costs, cage, lighting, natural behavior, stereotyped behavior, temperature, humidity, ventilation, handling, bedding, food.

Poultry Science Association and R.D. Reynnells. (June 1997). **Poultry Science Resource List and Rabbit Resource List** Savoy, IL. (copies currently available from AWIC).

NAL Call No.: SF481.25 P68

Keywords: university, commodity group, and government contacts, experts listed by state and area of interest.

Swanson, J.C. and J.I. McNitt (September 1997) **Rabbits**. In: *Animal Welfare Issues Compendium: A Collection of 14 Discussion Papers*, R.D. Reynnells and B.R. Eastwood, eds., US Department of Agriculture, Cooperative State Research, Education and Extension Service, Plant and Animal Systems, Washington, DC, p. 108-117.

NAL Call No.: HV4711 A588 1997

Keywords: confinement rearing, breeding, wool harvesting, fur production, transport.

Sheep and Goats

Berry, D. (1994). **Housing, husbandry, and welfare of sheep and goats: January 1985-April 1994**. *Quick Bibliography Series* U.S. Department of Agriculture, National Agricultural Library: Beltsville, MD, 30p.

NAL Call No.: aZ5071.N3 No.94-36

Keywords: bibliography, flooring, crate design, ventilation, temperature control.

Boldrick, L. and L. Hale (1996). *Pygmy Goats Management and Veterinary Care*

All Pub., Orange, CA, 237 p.

NAL Call No.: SF386.P94B65 1996

Keywords: care, husbandry, health.

Gonyou, H.W. (Oct. 1991). **Behavioral methods to answer questions about sheep**. *Journal of Animal Science* 69(10):4155-4160.

NAL Call No.: 49 J82

Keywords: preference testing, aversiveness, spatial behavior, social behavior.

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NAL Call No.: HV4711 A588 1997

Keywords: personnel, facilities, shearing, dogs, castration, tail-docking, lambing, fostering.

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NAL Call No.: QL750.A6

Keywords: handling, fear, heart rate, stress.

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NAL Call No.: HV4701.A557

Keywords: stockpeople, human-animal bond, fear, handling.

Jarvis, A.M. and M.S. Cockram (1999). **Environmental conditions within livestock vehicles during the commercial transport of sheep.** In: *Farm Animal Welfare, Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK, 1999.* A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), British Society of Animal Science (No. 23): UK, p. 129-131.

NAL Call No.: SF5 B74 No. 23

Keywords: animal welfare, livestock, legislation, transport of animals, road transport, livestock transporters, temperature, humidity.

Kent, J.E., V. Molony, R.E. Jackson, and B.D. Hosie (1999). **Chronic inflammatory responses of lambs to rubber ring castration: are there any effects of age or size of lamb at treatment?** In: *Farm Animal Welfare, Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK, 1999.* A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), British Society of Animal Science (No. 23): UK, p. 160-162.

NAL Call No.: SF5 B74 No. 23

Keywords: castration, lambs, animal welfare, livestock, legislation, inflammation, treatment, hydrocortisone, pain, age, sheep.

Swine

Allen, T. (March 1994). **Housing, husbandry, and welfare of swine: January 1991-January 1995.** *Quick Bibliography Series (94-14)*, National Agricultural Library: Beltsville, MD.

NAL Call No.: aZ5071.N3 No.94-14

Keywords: welfare, husbandry, housing, bibliography.

Andersen, I.L., K.E. Boe, and A.L. Kristiansen (1999). **The influence of different feeding arrangements and food type on competition at feeding in pregnant sows.** *Applied Animal Behaviour Science* 65(2):91-104, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: feeding, sows, aggression, bites, animal behavior, animal welfare, animal experiments, animal housing, feed intake, dry feeding, dry feeds, wet feeding.

Batchelor, G.R. (1991). **Environmental enrichment for the laboratory pig.** *Animal Technology* 42(3):185-189.

NAL Call No.: QL55.I5

Keywords: toys, social interaction, human-animal bond.

Bauer, L. (1999). **Hogs, hoop houses, and holistic management: a diversified crop/livestock farm.** In: *Small Farming Systems for the Midwest and Reintegrating Agriculture and Community in the Midwest. Proceedings of a Two-Part Seminar Series, University of Nebraska-Lincoln, Fall 1998 and Spring 1999*, R.Olson and L. Bauer (eds.), Center for Sustainable Agricultural Systems: Lincoln, USA, p. 23-28.

NAL Call No.: S494.4 A65 S63 1999

Keywords: pig farming, animal welfare, environmental protection, alternative farming, environmental impact, social impact, economic impact, case studies, small farms, family farms.

Boyle, L.A., D. Regan, F.C. Leonard, P.B. Lynch and P. Brophy (2000). **The effect of mats on the welfare of sows and piglets in the farrowing house.** *Animal Welfare* 9(1):39-48, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: farrowing, piglets, sows, feet, floors, lesions, skin lesions, slatted floors, weaning, pig housing, animal welfare.

Bracke, M.B.M., J.H.M. Metz, B.M. Spruijt, and A.A. Dijkhuizen (1999). **Overall welfare assessment of pregnant sow housing systems based on interviews with experts.**

Netherlands Journal of Agricultural Science 47(2):93-104, ISSN: 0028-2928.

NAL Call No.: 12 N3892

Keywords: animal welfare, feeding, group size, models, sows, stalls, tethering, pig housing, housing, decision making.

Bradshaw, R.H., J. Skyrme, E.E. Brenninkmeijer, and D.M. Broom (2000). **Consistency of measurement of social status in dry-sows group-housed in indoor and outdoor systems.** *Animal Welfare* 9(1):75-79, ISSN: 0962-7286.

Keywords: dominance, gilts, social behavior, behavior, sows, animal welfare, pig housing.

Bradshaw, R.H., J.M. Randall, M.L. Forsling, R. Rodway, J.A. Goode, S.N. Brown, and D.M. Broom (1999). **Travel sickness and meat quality in pigs.** *Animal Welfare* 8(1):3-14, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: pigs, transport of animals, nausea, morbidity, stunning, slaughter, blood plasma, hydrocortisone, endorphins, muscles, longissimus dorsi, pork, meat, meat quality, exudative meat, dark cutting meat, vasopressin, animal welfare.

Broom, D.M., M.T. Mendl, and A.J. Zanella (Oct. 1995). **A comparison of the welfare of sows in different housing conditions.** *Animal Science: An International Journal of Fundamental and Applied Research* 61(pt.2):369-385.

NAL Call No.: SF1.A56

Keywords: sows, group size, housing, social behavior, animal welfare.

Carroll, J.A., J.A. Daniel, D.H. Keisler, and R.L. Matteri (April 1999). **Non-surgical catheterization of the jugular vein in young pigs.** *Laboratory Animals* 33(2):129-134, ISSN: 0023-6772.

NAL Call No.: QL55.A1L3

Keywords: piglets, blood sampling, cannulation, jugular vein, stress, animal welfare, blood plasma, hydrocortisone.

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NAL Call No.: SF5 B74 No. 23

Keywords: transporters, animal welfare, livestock, legislation, transport of animals, road transport, livestock transporters, temperature.

Christianson, L.L., D.P. Bane, et al. (Mar. 1990). **Swine Care Handbook for Producers Using Environmentally Controlled Housing** National Pork Producers Council: Des Moines, Iowa, 24p.

NAL Call No.: SF 396.3 S88

Keywords: swine, husbandry systems, management, transportation, environmental control, noise, facilities, equipment, health care.

Coleman, G.J., P.H. Hemsworth, M. Hay, and M. Cox (Feb. 2000). **Modifying stockperson attitudes and behaviour towards pigs at a large commercial farm.** *Applied Animal Behaviour Science* 66(1-2):11-20, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: attitudinal-behavioral modification behavioral method, cognitive-behavioral, intervention, animal behavior, animal welfare, commercial pig farm, human-animal relationship, productivity, stockperson attitude, stockperson behavior.

Cooperative Extension Service (1976-1993). **Pork Industry Handbook** Purdue University: West Lafayette, Ind., 450p.

NAL Call No.: SF395 P62

Keywords: production systems, breeding, genetics, reproduction, nutrition, management, housing, manure management, herd health, marketing, pork quality.

English, P.R., S.A. Grant, O. McPherson, and S.A. Edwards (1999). **Evaluation of the effects of the positive "befriending" of sows and gilts ("pleasant" treatment) prior to parturition and in early lactation on sow behaviour, the process of parturition and piglet survival.** In: *Farm Animal Welfare - Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK, 1999*, A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), British Society of Animal Science (No. 23): UK, p. 132-136.

NAL Call No.: SF5 B74 No. 23

Keywords: gilts, lactation, parturition, piglets, young animals, sows, survival, animal welfare, livestock, legislation, handling, stockmen, pregnancy.

Erhard, H.W., M. Mendl, and D.D. Ashley (1999). **Aggression in pigs: an example of using basic research in an applied context.** In: *Farm Animal Welfare - Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK, 1999*, A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), British Society of Animal Science (No. 23): UK, p. 163-164.

NAL Call No.: SF5 B74 No. 23

Keywords: animal welfare, swine, legislation, animal behavior.

Farley, J.L., et al. (1991). *Animal Care Series: Swine Care Practices* University of California Cooperative Service and California Pork Industry Group, 18p.

NAL Call No.: SF395 S92

Keywords: disease, management, newborn pigs, breeding, nutrition, housing, transportation.

Geverink, N.A., I.C. de Jong, E. Lambooij, H.J. Blokhuis, and V.M. Wiegant (1999). **Influence of housing conditions on responses of pigs to preslaughter treatment and consequences for meat quality.** *Canadian Journal of Animal Science* 79(3):285-291, ISSN: 0008-3984.

NAL Call No.: 41.8 C163

Keywords: pig housing, meat quality, hydrocortisone, farrowing, finishing, handling, pens, stress, straw, litter, transport of animals, animal welfare.

Gonyou, H.W., P.H. Hemsworth, and J.L. Barnett (1986). **Effects of frequent interactions with humans on growing pigs.** *Applied Animal Behaviour Science* 15(4):303-314.

NAL Call No.: QL750 A6

Keywords: corticosteroids, chronic stress, reproductive effects, handling.

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Keywords: available through the Livestock Conservation Institute, behavior, swine, mixing, fighting, loading, lighting, chute design, trucking, bruising.

Gregory, N.G. and C.D. Devine (1999). **Survey of sow accommodation systems used in New Zealand.** *New Zealand Journal of Agricultural Research* 42(2):187-194, ISSN: 0028-8233.

NAL Call No.: 23 N4892

Keywords: animal welfare, farrowing, buildings, pens, pregnancy, sows, weaning, pig housing.

Hohenshell, L.M., J.E. Cunnick, S.P. Ford, H.G. Kattesh, D.R. Zimmerman, M.E. Wilson, R.L. Matteri, J.A. Carroll, and D.C. Lay Jr. (Jan. 2000). **Few differences found between early- and late-weaned pigs raised in the same environment.** *Journal of Animal Science* 78(1):38-49, ISSN: 0021-8812.

NAL Call No.: 49 J82

Keywords: hormones, animal behavior, animal welfare, physiology, stress effects, and weaning times.

Holden, P.J. and J. McGlone (1999). **Animal welfare issues: swine.** *Animal Welfare Information Center Bulletin* 9(3/4):9-11, ISSN: 1522-7553.

NAL Call No.: aHV4701.A952

Keywords: pigs, animal welfare, pig housing, floor space, social dominance, stress factors, extensive livestock farming.

Holloway, I.A., N. Waran, and E. Austin (1999). **Assessing public attitudes towards pig welfare in the UK.** *Pig Journal* 44: 38-51, ISSN: 1352-9740.

NAL Call No.: SF971 P5

Keywords: attitudes, animal welfare, consumer behavior, pig farming, questionnaires.

Hutson, G.D., T.J. Ambrose, J.L. Barnett, and A.J. Tilbrook (2000). **Development of a behavioural test of sensory responsiveness in the growing pig.** *Applied Animal Behaviour Science* 66(3):187-202, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: handling, animal behavior, animal welfare, tests, sounds, vision, stress.

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NAL Call No.: S605.5 I45 1998

Keywords: climate, extensive production, extensive husbandry, organic farming, housing, animal welfare, pigs.

Jong, I.C. de, E. Lambooij, S.M. Korte, H.J. Blokhuis, and J.M. Koolhaas (1999). **Mixing induces long-term hyperthermia in growing pigs.** *Animal Science: An International Journal of Fundamental and Applied Research* 69(3):601-605, ISSN: 0003-3561.

NAL Call No.: SF1 A56

Keywords: hyperthermia, body temperature, heart rate, stress, animal welfare, physiology, animal behavior, pig housing, aggression.

Jungbluth, T., and A. Stubbe (1999). **A new technique for the ethological improvement of intensive housing systems for pigs.** In: *ASAE/CSAE-SCGR Annual International Meeting, Toronto, Ontario, Canada, 18-21 July, 1999*, American Society of Agricultural Engineers (ASAE): St Joseph, USA, 14p.

Keywords: animal behavior; chains, performance, straw, pig housing, animal welfare, equipment, housing, toys.

Kelly, H.R.C., J.M. Bruce, S.A. Edwards, P.R. English, and V.R. Fowler (2000). **Limb injuries, immune response and growth performance of early-weaned pigs in different housing systems.** *Animal Science: An International Journal of Fundamental and Applied Research* 70(1):73-83, ISSN: 0003-3561.

NAL Call No.: SF1 A56

Keywords: animal housing, immune response, trauma, antibody formation, bursitis, feet, immunoglobulins, indicators, pens, pig housing, animal welfare, legs, lameness, growth, feed intake, feed conversion efficiency, fattening performance.

Kielly, J., Dewey, C.E., and M. Cochran (1999). **Castration at 3 days of age temporarily slows growth of pigs.** *Swine Health and Production* 7(4):151-153, ISSN: 1066-4963.

NAL Call No.: SF971 N472

Keywords: castration, piglets, preweaning period, statistical analysis, weaning, weaning weight, weight gain, surgery, animal welfare.

Koba, Y., and H. Tanida (1999). **How do miniature pigs discriminate between people? The effect of exchanging cues between a non-handler and their familiar handler on discrimination.** *Applied Animal Behaviour Science* 61(3):239-252, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: animal welfare, animal behavior, perception, vision, color, smell, odor, senses.

Kreger, M. (Feb. 1995). **Housing, husbandry, and welfare of swine: January 1991-January 1995. Quick Bibliography Series (95-06)**, National Agricultural Library: Beltsville, MD, 84p.

NAL Call No.: aZ5071.N3

Keywords: welfare, husbandry, housing, bibliography.

Laitat, M., M. Vandenheede, A. Desiron, B. Canart, and B. Nicks (Feb. 1999). **Comparison of feeding behaviour and performance of weaned pigs given food in two types of dry feeders with integrated drinkers.** *Animal Science: an International Journal of Fundamental and Applied Research* 68(1):35-42, ISSN: 1357-7298.

NAL Call No.: SF1.A56

Keywords: pigs, dry feeding, water intake, body weight, liveweight gain, pig feeders, feed intake, feed conversion, animal welfare.

Lay, D.C. Jr., M.F. Haussmann, and M.J. Daniels (2000). **Hoop housing for feeder pigs offers a welfare-friendly environment compared to a nonbedded confinement system.** *Journal of Applied Animal Welfare Science: JAAWS* 3(1):33-48, ISSN: 1088-8705.

NAL Call No.: HV4701.J68

Keywords: pigs, pig housing, litter, stocking density, animal behavior, play, winter, abnormal behavior, summer, lameness, wounds, physical activity, blood plasma, hydrocortisone, respiration rate, liveweight gain, feed conversion, animal welfare.

Mayland, A.P., R.M. Sibly, and H.J. Guise (1999). **Pen sizes allowing heavily pregnant sows to turn without difficulty.** *Veterinary Record: Journal of the British Veterinary Association* 145(13):373-374, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: pregnancy, sows, legislation, pens, animal housing, animal welfare, gilts, pig housing, farrowing houses, farrowing pens, size.

McFarlane, A. and G. McFarlane (1996). *Pig Keeping on a Small Scale* Kenthurst, NSW, Australia: Kangaroo Press, 72p., ISBN: 0-86417-790-9.

NAL Call No.: SF395.M43 1996

Keywords: production, nutrition, housing.

McGlone, J.J. (June 26, 1995). **Facility design should correspond to animal behavior.** *Feedstuffs* 67(26): 12-16, 21, ISSN:0014-9624.

NAL Call No.: 286.81 F322

Keywords: social behavior, pen design, dominance.

McGlone, J.J., R.I. Nicholson, J.M. Hellman, and D.N. Herzog (June 1993). **The development of pain in young pigs associated with castration and attempts to prevent castration-induced behavioral changes.** *Journal of Animal Science* 71(6):1441-1446, ISSN:0021-8812.

NAL Call No.: 49 J82

Keywords: reduced suckling, reduced standing, increased lying times, weaning weights, and mortality, analgesics.

Morgan, C.A., B.L. Nielsen, A.B. Lawrence, and M.T. Mendl (1999). **Describing the social environment and its effects on food intake and growth.** In: *A Quantitative Biology of the Pig* I. Kyriazakis (ed.), CAB International Wallingford, UK, ISBN: 0-85199-273-0, p. 99-125.

NAL Call No.: IPM990717336

Keywords: reviews, animal welfare, feeding behavior, group effect, stress, performance, growth, feed intake, environmental factors, pig feeding, housing.

Mouttotou, N., F.M. Hatchell, and L.E. Green (June 1999). **Foot lesions in finishing pigs and their associations with the type of floor.** *Veterinary Record: Journal of the British Veterinary Association* 144(23):629-632, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: floors, floor coverings, foot injuries, hoof and claw injuries, prevention and control, abattoirs, animal husbandry, animal welfare.

O'Connell, N.E. and V.E. Beattie (1999). **Influence of environmental enrichment on aggressive behaviour and dominance relationships in growing pigs.** *Animal Welfare* 8(3):269-279, ISSN: 0962-7286.

NAL Call No.: HV4701.A557

Keywords: aggressive behavior, animal behavior, dominance, environment, aggression, pig housing, suckling, body weight, social behavior, animal welfare, age differences, animal husbandry.

Olsson, I.A.S., F.H. de Jonge, T. Schuurman, and F.A. Helmond (1999). **Poor rearing conditions and social stress in pigs: repeated social challenge and the effect on behavioural and physiological responses to stressors.** *Behavioural Processes* 46(3):201-215, ISSN: 0376-6357.

NAL Call No.: QL750 B4

Keywords: stress, aggressive behavior, animal behavior, dominance, piglets, sows, aggression, pig housing, animal welfare.

Pajor, E.A., D.M. Weary, D. Fraser, and D.L. Kramer (Oct. 1999). **Alternative housing for sows and litters. 1. Effects of sow-controlled housing on responses to weaning.** *Applied Animal Behaviour Science* 65(2):105-121, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: sows, piglets, weaning, pig housing, piglet feeding, floor pens, animal behavior, vocalization, responses, weight losses, bites, liveweight gain, feed intake, litter weight, temperament, maternal behavior, animal welfare.

Phillips, P.A., D. Fraser, and B. Pawluczuk (March 2000). **Floor temperature preference of sows at farrowing.** *Applied Animal Behaviour Science* 67(1-2):59-65, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: animal management, animal welfare, environmental preference, equipment design, farrowing pen, floor temperature preference, selection, parturition, thermal environment preference, selection, thermoregulation.

Raj, A.B.M. (Feb. 1999). **Behaviour of pigs exposed to mixtures of gases and the time required to stun and kill them: welfare implications.** *The Veterinary Record: Journal of the British Veterinary Association* 144(7):165-168, ISSN: 0042-4900.

NAL Call No.: 41.8 V641

Keywords: pigs, stunning, animal welfare, animal behavior, time consciousness, argon, carbon dioxide, feasibility studies.

Ramonet, Y., M.C. Meunier-Salaun, and J.Y. Dourmad (1999). **High-fiber diets in pregnant sows: digestive utilization and effects on the behavior of the animals.** *Journal of Animal Science* 77(3):591-599, ISSN: 0021-8812.

NAL Call No.: 49 J82

Keywords: fiber, pregnancy, sows, crude fiber, energy intake, mastication, appetite, feeding behavior, animal welfare.

Savard, M. (2000). **Modelling risk, trade, agricultural and environmental policies to assess trade-offs between water quality and welfare in the hog industry.** *Ecological Modelling* 125(1):51-66, ISSN: 0304-3800.

NAL Call No.: QH541.15 M3E25

Keywords: models, risk, international trade, agricultural policy, environmental policy, water quality, animal welfare, pig farming, meat and livestock industry, pollution, optimization, trade liberalization, imports, nitrogen, phosphates.

Spoolder, H.A.M., S. Corning, and S.A. Edwards (1999). **The specification of stocking density in relation to the welfare of finishing pigs.** In: *Farm Animal Welfare - Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK, 1999*, A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), British Society of Animal Science (No. 23): UK, p.150-151.

NAL Call No.: SF5 B74 No. 23

Keywords: finishing, stocking density, animal welfare, livestock, legislation, animal behavior.

Spoolder, H.A.M., S.A. Edwards, and S. Corning (1999). **Effects of group size and feeder space allowance on welfare in finishing pigs.** *Animal Science* 69(3):481-489, ISSN: 0003-3561.

Keywords: finishing, aggression, liveweight gain, feed dispensers, feeding, animal housing, lesions, pens, skin, skin lesions, weight gain, animal welfare, fattening performance, group size, feeding behavior.

Swanson, J.C. (1990). **Swine housing and facilities: January 1985-August 1990. Quick Bibliography Series** U.S. Department of Agriculture, National Agricultural Library: Beltsville, MD, 30p.

NAL Call No.: aZ5071.N3 No.91-15

Keywords: bibliography, flooring, crate design, ventilation, temperature control.

Swanson, J.C. (1990). **Welfare, care and husbandry of swine: January 1979-August 1990. Quick Bibliography Series** U.S. Department of Agriculture, National Agricultural Library: Beltsville, MD, 20p.

NAL Call No.: aZ5071.N3 No.91-14

Keywords: bibliography, behavior, handling, transport, slaughter, housing.

Turner, S.P. and S.A. Edwards (1999). **Methods of assessing adequacy of drinker provision in group-housed pigs.** In: *Farm Animal Welfare - Who Writes the Rules? Proceedings of an International Symposium Organized by the British Society of Animal Science, Edinburgh, UK, 1999*, A.J.F. Russel, C.A. Morgan, C.J. Savory, M.C. Appleby, and T.L.J. Lawrence (eds.), British Society of Animal Science (No. 23): UK, p.152-154.

NAL Call No.: SF5 B74 No. 23

Keywords: animal welfare, livestock, legislation, animal housing, water, drinking, pig housing.

Turner, S.P., S.A. Edwards, and V.C. Bland (June 1999). **The influence of drinker allocation and group size on the drinking behaviour, welfare and production of growing pigs.** *Animal Science: an International Journal of Fundamental and Applied Research* 68(4):617-624, ISSN: 1357-7298.

NAL Call No.: SF1.A56

Keywords: pigs, nipple drinkers, ratios, drinking, water intake, aggressive behavior, group size, lesions, liveweight gain, diurnal variation, feed intake, feed conversion, animal welfare.

Weary, D.M., M.C. Appleby, and D. Fraser (1999). **Responses of piglets to early separation from the sow.** *Applied Animal Behaviour Science* 63(4):289-300, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: piglets, behavior, diets, age, age at weaning, separation, sows, animal welfare.

Weary, D.M., E.A. Pajor, M. Bonenfant, S.K. Ross, D. Fraser, and D.L. Kramer (Oct. 1999). **Alternative housing for sows and litters. 2. Effects of a communal piglet area on pre- and post-weaning behaviour and performance.** *Applied Animal Behaviour Science* 65(2):123-135, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: sows, piglets, pig housing, farrowing pens, floor pens, weaning, aggressive behavior, sow lactation, feeding frequency, suckling, creeps, creep feeding, liveweight gain, animal welfare, feed intake, animal behavior.

Whittaker, X., S.A. Edwards, H.A.M. Spolder, A.B. Lawrence, and S. Corning (1999). **Effects of straw bedding and high fiber diets on the behaviour of floor fed group-housed sows.** *Applied Animal Behaviour Science* 63(1):25-39, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: behavior, aggression, pens, feeds, litter, housing, management, feeding, social behavior, fiber, straw, sows, molasses, beet pulp, pig housing, animal welfare.

Worobec, E.K., I.J.H. Duncan, and T.M. Widowski (1999). **The effects of weaning at 7, 14, and 28 days on piglet behaviour.** *Applied Animal Behaviour Science* 62(2/3):173-182, ISSN: 0168-1591.

NAL Call No.: QL750.A6

Keywords: animal welfare, piglets, weaning, age differences, animal husbandry, animal production, abnormal and aggressive behavior.

Xin, H. (1999). Assessing swine thermal comfort by image analysis of postural behaviors.

Journal of Animal Science 77(Suppl. 2):1-9, ISSN: 0021-8812.

NAL Call No.: 49 J82

Keywords: image analysis, imagery, image processing, heat stress, animal behavior, cold stress, heat adaptation, animal welfare, physiology, posture.

Xin, H., J.D. Harmon, H. Dong, D.L. Harris, H.J. Chepeta, R.C. Ewan, and M.L. Gramer

(1999). Effects of post-weaning nutritional conditions on isowean pigs. *Transactions of the ASAE* 42(5):1463-1469, ISSN: 0001-2351.

NAL Call No.: 290.9 Am32T

Keywords: piglets, weight, nutrition, feeding, transport, physiology, animal welfare, water, body weight, transport of animals, management.

Organizations

Veterinary and animal producer organizations often provide brochures, manuals, audiovisuals, and contact listings. A selected list of organizations are included below. All websites were accessed in August 2000 to ensure current accuracy.

American Association for Laboratory Animal Science (AALAS)

70 Timber Creek Dr., Suite 5
Cordova, TN 38018
Tel: (901) 754-8620, Fax: (901) 753-0046, E-mail: info@aalas.org
WWW: <http://www.aalas.org>

AALAS certifies laboratory animal technicians who pass an exam based on the AALAS training manuals and other materials such as the National Research Council's *Guide for the Care and Use of Laboratory Animals. Training Manual Series: Volume II* contains chapters on birds, swine, and ruminants and horses. Behavior, husbandry, diet, handling and restraint, and sexing and breeding are discussed briefly. Accreditation training and manuals are available to AALAS and non-AALAS members. National and regional annual meetings include continuing education and presentations on agricultural animals used in research.

American Dairy Goat Association

P.O. Box 865
Spindale, NC 28160
Tel: (828) 286-3801, Fax: (828) 287-0476, E-mail: info@adga.org
WWW: <http://www.adga.org/>

American Dairy Goat Association (ADGA) provides fact sheets and brochures related to goat care and production. Topics include establishing a goat herd, husbandry, milk production, health, hoof trimming, and more.

American Dairy Science Association

1111 N. Dunlap Ave.
Savoy, IL 61874
Tel: (217) 356-3182, Fax: (217) 398-4119. E-mail: adsa@assochq.org
WWW: <http://www.adsa.uiuc.edu/>

The objectives of *American Dairy Science Association* (ADSA) are to stimulate the discovery, application, and dissemination of knowledge. Original research, reviews and timely information are published in the official ADSA publication, the *Journal of Dairy Science*. The ADSA website includes additional links to university dairy related websites, breed associations, and databases.

American Rabbit Breeders Association

P.O. Box 426

Bloomington, IL 61702

Tel: (309) 664-7500, Fax: (309) 309-664 0941, E-mail: arbapost@aol.com

WWW: <http://www.arba.net>

The American Rabbit Breeders Association, Inc. (ARBA) is an organization dedicated to the promotion, development and improvement of the domestic rabbit and cavy industry and for exhibition. ARBA offers books for sale on husbandry, show standards, and more.

American Sheep Industry Association (ASI)

6911 South Yosemite St.

Englewood, CO 80112-1414

Tel: 303-771-3500, FAX: 303-771-8200, E-mail: info@sheepusa.org

WWW: <http://www.sheepusa.org>

ASI's primary purpose is to promote the U.S. sheep industry. Information contained on the ASI website includes care, husbandry, health, and production information. Also included is a *For Kids* page.

American Society of Animal Science (ASAS)

1111 North Dunlap Ave.

Savoy, IL 61874

Tel: (217) 356-3182, Fax: (217) 398-4119, E-mail: asas@assochq.org

WWW: <http://www.asas.org/>

The American Society of Animal Science (ASAS) is a professional organization for animal scientists designed to help members provide effective leadership through research, extension, teaching and service for the dynamic and rapidly changing livestock and meat industries. ASAS publishes the monthly *Journal of Animal Science*. The ASAS website includes links to academic organizations, collections, directories, and animal science related organizations.

American Veterinary Medical Association (AVMA)

1931 N. Meacham Rd., Suite 100

Schaumburg, IL 60173-4360

Tel: (847) 925-8070, Fax: (847) 925-1329, E-mail: avmainfo@avma.org

WWW: <http://www.avma.org/>

The American Veterinary Medical Association (AVMA) is a professional organization composed of large and small animal veterinarians. The objective of the Association is to advance the science and art of veterinary medicine, including its relationship to public health, biological science, and agriculture. The Association publishes two journals - *The Journal of the American Veterinary Medical Association (JAVMA)* and *the American Journal of Veterinary Research*. The *AVMA Emergency Preparedness and Response Guide* provides disaster resource information including: planning and preparation, animal care and handling, training procedures and materials, and key contacts. The AVMA Audiovisual Library provides videotapes on surgical techniques, animal handling, diagnostic techniques, blood sampling, hoof care, shoeing, and general husbandry. The audiovisuals are loaned only to AVMA members, veterinary associations and colleges, veterinary technician training programs, and armed forces veterinary medical units in the United States. The AVMA website features a *Care for Pets* site with information on health, pet loss, animal safety, buying a pet, and a kid's corner.

Animal Industry Foundation (AIF)

1501 Wilson Blvd., Suite 1100

Arlington, VA 22209

Tel: (703)524-0810, Fax: (703)524-1921, E-mail: aif@aif.org

WWW: <http://www.aif.org>

AIF is a national nonprofit education organization serving as the collective voice for poultry and livestock producers. The AIF website offers an online guide entitled *Teacher Resource Guide to Food Animal Care and Use Issues* at <http://www.aif.org/guide.htm>. The guide lists educational materials available ranging in topics from animal rights, animal well-being, showing, raising a calf, learning kits, children's activities, and more. Each listing includes a description of the materials, the appropriate grade level and ordering information.

Animal Welfare Information Center (AWIC)

National Agricultural Library

10301 Baltimore Ave.

Beltsville, MD 20705

Tel: (301) 504-6212, Fax: (301) 504-7125, E-mail: awic@nal.usda.gov

WWW: <http://www.nal.usda.gov/awic>

The Animal Welfare Information Center (AWIC) located at the U.S. Department of Agriculture's National Agricultural Library provides reference services primarily for patrons using animals covered by the Animal Welfare Act. Farm animals used in teaching, testing, and non-production oriented research are covered by the Act. AWIC produces bibliographies on the welfare and husbandry of swine, cattle, horses, sheep, poultry, dogs, cats, rabbits, and rodents. The *Animal Welfare Information Center Bulletin* contains several articles on agricultural animal care and use including anesthesia, analgesia, animal transport, and animal welfare issues. The AWIC website includes these documents. The site also contains links to the Office for Protection from Research Risks, Animal and Plant Health Inspection Service/ Animal Care, and NetVet.

National Council for Agricultural Education

1410 King St., Suite 400

Alexandria, VA 22314

Tel: (703) 838-5881, Toll Free Tel: 1-800-772-0939 ext. 4241 (USA only), Fax: (703) 838-5888

E-mail: council@teamaged.org

WWW: <http://www.agedhq.org>

The Council's activities revolve around prevocational, secondary, post-secondary, young farmer and adult education programs. They also pertain to teacher education supervision and administration of agricultural education programs. The National Council for Agricultural Education (The Council) and the National Association of Agricultural Educators (NAAE) have developed a joint partnership for delivery of the *Professional Growth Series*. The *Professional Growth Series* offers instructional materials and training for teachers. The primary focus is to provide teachers of agriculture with timely, innovative, cutting-edge instructional material for integration into their existing curricula.

Instructional materials packages currently exist on the following topics: *Animal Welfare*; *Applied Environmental Science*; *Equine Science*; *Focusing on Agricultural Issues*; *Food Science, Safety and Nutrition*; and additional topics.

Visit <http://208.197.129.217/aero/council/index.html> for further information.

National Institute for Animal Agriculture (NIAA)

1910 Lyda Dr.

Bowling Green, KY 42104-5809

Tel: (270) 782-9798, Fax: (270) 782-0188, E-mail: niaa2000@aol.com

WWW: <http://www.animalagriculture.org>

The National Institute for Animal Agriculture (NIAA) is an umbrella organization of producers, veterinarians, processors, corporations, and commodity organizations that advocates programs that improve animal health, care, and food safety. NIAA produces educational videos and pamphlets on animal care, behavior, handling, transportation, and disease. Authors include animal scientists working in academic research institutions and commercial production facilities. Videos, pamphlets, and meeting proceedings may be ordered directly from NIAA.

National Pork Producers Council

P.O. Box 10383

Des Moines, IA 50306

Tel: (515) 223-2600, Fax: (512) 223-2646, E-mail: pork@nppc.org

WWW: <http://www.nppc.org/>

In 1996, National Pork Producers Council (NPPC) and the National Pork Board produced the *Swine Care Handbook*. The handbook covers husbandry systems, management practices, environmental management, facilities and equipment, feeding and nutrition, and herd health management. It includes text and illustrations. Copies can be obtained from NPPC or from NPPC website at <http://www.nppc.org/PROD/swinecarehandbook.html>

Poultry Science Association

1111 North Dunlap Ave.

Savoy, IL 61874-9604

Tel: (217) 356-3182, Fax: (217) 398-4119, E-mail: <http://www.psa.uiuc.edu/cgi-bin/psmail.cgi>

WWW: <http://www.psa.uiuc.edu/>

The Poultry Science Association (PSA) is a professional organization consisting of educators, scientists, extension specialists, administrators and producers who are committed to advancing the poultry industry. Helpful links are available to on-line poultry info via the Poultry Science Virtual Library at <http://posc.tamu.edu/library/dothier.html> Links are included to information on management, health, and breeds.

Websites

Website addresses change periodically. The sites listed are current as of August 2000.

The ADDS LABORATORY: Agricultural Databases for Decision Support

<http://www.reeusda.gov/agsys/adds/nadl.htm#PRODUCTS>

Comprehensive electronic collections of peer-reviewed and expert-selected educational materials, lists, software tools and other decision aids to support decision making by the nation's farmers, ranchers, growers and forest land owners, and by those who work with them in an educational, consultative, or service capacity. Databases available/or in progress for dairy, beef, goat, sheep, and swine. Collections are distributed via CD-ROM and the World Wide Web.

Animal Well-Being and Stress Control Systems

<http://www.nps.ars.usda.gov/programs/105s2.htm>

The Agricultural Research Service (ARS) is the principal research agency of the U.S. Department of Agriculture. ARS is charged with extending the nation's scientific knowledge across a broad range of program areas. This website describes ARS research initiatives in the area of farm animal well-being and stress.

AgNIC Animal Science Home Page

<http://www.lib.iastate.edu/animalsci/index.html>

The AgNIC Animal Science Page is an experimental reference guide to animal science information on the Internet. It is the Iowa State University component of the Agriculture Network Information Center (AgNIC) coordinated by the National Agricultural Library.

Cooperative State Research Education & Extension Service (CSREES) Home Page

<http://www.reeusda.gov/>

CSREES links the research and education programs of the U.S. Department of Agriculture and works with land-grant institutions in each state, territory and the District of Columbia. The mission of CSREES is in cooperation with partners and customers, to advance a global system of research, extension and higher education in the food and agricultural sciences and related environmental and human sciences to benefit people, communities, and the Nation. A clickable map of extension programs by state is available at <http://www.reeusda.gov/statepartners/usa.htm>

Cow Stress and Well-being Publications

<http://www.inform.umd.edu/EdRes/Topic/AgrEnv/ndd/browse.html>

This site contains animal handling tips, stray voltage information, how to reduce heat stress, animal trucking guide, and regulatory issues concerning cattle.

Dr. Temple Grandin's Web Page

<http://grandin.com>

Full text, abstracts, reviews, and general information based on or related to the work of applied ethologist Temple Grandin. Topics include livestock behavior, design of stockyards and restraining systems, humane and ritual slaughter, stress and meat quality, current research, animal welfare/rights, and books.

NetVet

<http://netvet.wustl.edu/vet.htm>

NetVet focuses on veterinary resources with links to veterinary education, listservs, organizations, publications, and images. This award-winning site is an excellent starting point for looking for materials for training personnel in care and use of agricultural animals. A useful feature of NetVet is the *Electronic Zoo*. Among the *Electronic Zoo* animal group icons are horses, cows, pigs, small ruminants, and birds. Each icon contains a list of websites related to these species. The cow page for example, <http://netvet.wustl.edu/cows.htm>, includes links to professional associations such as the American Dairy Science Association, trade publications including *Hoard's Dairyman*, university departments of animal or dairy sciences, and information publications including *Information Resources for Mastitis*.

Ohio Agricultural Education WWW Server

http://ad254-5.ag.ohio-state.edu:80/OCMS/OHIO_aged.html

This server provides ordering and pricing information for Learning Laboratory Kits, interactive CDs, books, videos, and brochures. Subject coverage includes quality assurance, animal care, and handling, of beef, dairy, swine, goats, sheep, rabbits, and dogs. Teaching materials for FFA projects are listed as well.

Pigs on the Internet

<http://www.pighealth.com/Products/POIDISK.HTM>

A guide available on diskette to swine resources on the internet. The diskette includes a special section on youth projects, management, welfare, behavior, transport, and more. The diskette was developed an effort to guide individuals interested in swine through the myriad of resources available on the internet. The disk may be purchased for \$40 or 25 GB pounds. The *Pigs on the Internet* diskette works on either PC (any version of Windows) or Apple Mac computers. For further information contact:

Dr. Michael Meredith, Managing Director
Pig Disease Information Centre Ltd.
4, New Close Farm Business Park
Bar Road, Lolworth, Cambs., CB3 8DS, U.K.
UK Tel: 01954-780695 UK Fax: 01954-780235
International fax: +44-1954-780235 or +44-1954-780568
Company E-mail: pdic@btinternet.com

Quality Assurance: Strengthening the Chain of Wholesome Food Production

<http://www.fairsnet.org/quality/index.htm>

The purposes of this site are to provide quality assurance educational opportunities to all youth who raise livestock, poultry, and/or participate in small animal projects. The five quality assurance points of: proper injection sites; proper facilities; nutrition; reading and following label directions; and handling and care of livestock; are covered. The site is designed to compliment the *Quality Assurance: Strengthening the Chain of Wholesome Food Production* video. The website is interactive and includes a quiz, certificate of completion, and links to other sites. The site is supported by California Department of Education, Department of Food and Agriculture, and the Western Fairs Association.

Additional Links

(Current as of August 2000)

4-H Focus

<http://www.ets.uidaho.edu/4-h>

4-H Horse References (revised April 1997)

<http://www.das.psu.edu/extension/4-HHorse/>

4-H in the USA

<http://www.4h-usa.org/>

Animal Behavior and Welfare Sites

<http://www.erols.com/mandtj/>

Animal Rights (descriptions of many sites along with a grade level rating for content)

<http://www.studyweb.com/animals/anirite2.htm>

Applied Ethology Home Page

<http://www.usask.ca/wcvm/herdmed/applied-ethology/>

Breeds of Livestock

<http://www.ansi.okstate.edu/breeds/>

Center for Veterinary Medicine (CVM) (regulates the manufacture and distribution of drugs and feed additives intended for animal use)

<http://www.fda.gov/cvm/>

Dairy Bull Calves: Where Do They Go?

<http://www.dqacenter.org/quest/96/oct965.htm>

Digital Librarian (general web searching)

<http://www.digital-librarian.com/>

FASS Federation of Animal Science Societies

<http://www.fass.org>

Goodwin Educational Video

<http://home1.gte.net/jgood1/>

House Rabbit Society Home Page and Rabbit Care Guide

<http://www.rabbit.org/>

Humane Society of the United States (HSUS) Recommended Humane Standards for Raising Livestock and Poultry

http://www.eap.mcgill.ca/LPAW_1.htm

Institute of Laboratory Animal Resources: Principles and Guidelines for the Use of Animals in Precollege Education

<http://www2.nas.edu/ilarhome/23da.html>

Journal of Extension

<http://www.joe.org/>

Livestock Section of WWW Virtual Library

<http://www.ansi.okstate.edu/library>

Livestock Section of WWW Virtual Library for Youth

<http://www.ansi.okstate.edu/library/youth.html>

National Agricultural Statistics Service Home Page Library
<http://www.usda.gov/nass>

National FFA Organization
<http://www.ffa.org>

Search Amazon.Com for Books
<http://www.amazon.com>

Systems Approach to Livestock Evaluation is Ethical and Practical
<http://info.ag.uidaho.edu/AgKnowledge/agknowledge56.htm>

University of Maryland 4-H Pages
<http://www.agnr.umd.edu/CES/4h/>

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All requests, regardless of format, **must** include the data elements listed below. A separate request form must be submitted for each document. When requesting via e-mail, however, more than one request form may be included in the same e-mail message.

Required Data Elements

- Borrower's name, full mailing address, and USDA or other eligible agency name. On e-mail requests this information must be in block format with at least two blank lines above and below so form may be used in a window envelope.
- Complete citation including verification (source of citation) and NAL call number available.
- Date after which item is no longer needed.
- Copyright Compliance
Pre-printed forms must contain your signature to indicate copyright compliance. On e-mail requests include the complete Statement of Copyright Compliance ("I have read the warning on copyright restrictions and accept full responsibility for compliance"), **your full name, date, and telephone number in each request**. Libraries may indicate compliance by including the initials of one statement, either "CCL" for compliance with the copyright law or "CCG" for compliance with Copyright Guidelines. Requests will be rejected if this information is not included.
- Fax number or ARIEL™ IP address (if delivery by either of these methods is desired).

E-Mail Request Procedures

E-mail: lending@nal.usda.gov

Electronic mail requests may be sent via the Internet to the address above. Multiple requests may be included in a single message if they are complete unto themselves, contain all of the required data elements and closely resemble the samples below. Each request within a message must be formatted as an individual request complete with name, address, copyright compliance, and request ID number. Use the following standardized number format to identify the requests included in the e-mail message:

1st request sent to NAL on July 25 will be jul25NAL1
2nd request sent to NAL on July 25 will be jul25NAL2

Each request should cite this identification number on the request form. The number or range of numbers if more than one request is included in the same e-mail message (ex: jul25NAL1-4) should also appear in the subject line of the e-mail message.

ARIEL™ Request Procedures

NAL IP Address: ariel.nal.usda.gov

ARIEL™ is a document delivery software package (available from Research Libraries Group) which allows documents to be scanned and sent over the Internet. Requests can be submitted via e-mail, mail, etc., or created on one of the standard forms listed under "Mail" below, scanned and sent to NAL's IP address. If an ARIEL™ 'receive only' package is loaded on to your computer you can receive and print articles at your desktop. If an ARIEL™ address is included in a request, NAL will deliver up to 30 pages per article via ARIEL™. If the article length exceeds 30 pages or cannot be scanned reliably, NAL will deliver the material via Postal Service. For more information about this software (including equipment requirements) visit RLG's ARIEL™ WWW site (http://www.rlg.org/cgi-bin/print_hit_bold.pl/ariel.html).

Mail & Fax Requests

Requests may be sent to NAL via the U.S. Postal Service or facsimile. Requests should be submitted using one of the standard forms listed below.

- AD-245 (available from USDA procurement)
- CALS Printout - copy & complete the address & copyright information from the AD245 on to the back of the CALS printout.
- Individual Request Form (IRF)
- ALA or FILLS Interlibrary Loan Form

Mailing Address: _____ **Fax Number:** (301) 504-5675

National Agricultural Library
Document Delivery Services Branch, 6th Floor
10301 Baltimore Avenue
Beltsville, MD 20705-2351

Sample Electronic Mail Request

JUL25NAL1 Date Not Needed After: 8/25/976

Richard Smith
ARS, USDA
Research Station
Heartland, IA 56789

Canadian Journal of Soil Science 1988 v 68(1): 17-27
De Jong, R. Comparison of two soil-water models under semi-arid growing conditions

NAL Call No.: 56.8 C162 Ver: AGRICOLA

I have read the warning on copyright restrictions and accept full responsibility for compliance

Richard Smith 7/25/96 Phone# (301)555-1234
(your) Fax#: (301)555-5678 (your) ARIEL IP Address: 111.222.333.444.555

Services Available to Libraries, Institutions and Organizations

The National Agricultural Library (NAL) accepts requests from libraries and other organizations in accordance with the national and international interlibrary loan code and guidelines. In its national role, NAL supplies copies of agricultural materials not found elsewhere. Submit requests to major university libraries, national or provincial institutions or network sources prior to sending requests to NAL. If the needed publications are not available from these sources, submit requests to NAL with a statement indicating their non-availability.

Materials in NAL's collection are not loaned outside the United States; however, copies of materials may be provided. There is a limit of 50 pages per item to comply with copyright law.

AGLINET -- Requestors in countries with an AGLINET library are encouraged to make full use of that library and its networking capabilities. As an AGLINET participant, NAL provides free document delivery service for materials published in the United States to other AGLINET participants.

Requests -- Submit requests on the American Library Association (ALA) or the International Federation of Library Associations and Institutions (IFLA) interlibrary loan form, or via electronic mail, Ariel™, or facsimile. (See further details under *For Electronic Access and Delivery* below.)

Charges:

- Photocopy, hard copy of microfilm and microfiche--\$5.00 for the first 10 pages or fraction copied from a single article or publication. \$3.00 for each additional 10 pages or fraction.
- Duplication of NAL-owned microfilm--\$10.00 per reel.
- Duplication of NAL-owned microfiche--\$5.00 for the first fiche and \$.50 for each additional fiche per title.

Billing -- Charges include postage and handling, and are subject to change. Invoices are issued quarterly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Establishing deposit accounts with NTIS is encouraged. Annual billing is available on request by contacting NAL at the address below. **DO NOT SEND PREPAYMENT.**

For postal service delivery send requests to: USDA National Agricultural Library
Document Delivery Services Branch
4th Floor PhotoLab
10301 Baltimore Ave., NAL Bldg.
Beltsville, Maryland 20705-2351

For electronic access and delivery :

The Document Delivery Services Branch accepts ILL requests from libraries via several electronic methods. All requests must comply with established routing and referral policies and procedures. A sample format for ILL requests follows.

INTERNET.....lending@nal.usda.gov

Start the subject line with one word format:

3 letter month abbreviation + day + NAL + # of request placed that day,

For Example: jul25NAL4 (if this is the fourth request on July 25).

For Example: jul 25NAL1-4 (if this is four requests submitted at one time)

OCLC.....AGL

TELEFACSIMILE.....301-504-5675

Requests can be created on standard ILL forms and then faxed. NAL will fill via FAX at no additional cost if FAX number is included on request. NAL will send up to 30 pages per article. If request exceeds 30 pages, NAL will ship via postal service. There is no RUSH service.

ARIEL™198.202.222.162

NAL will fill the request via ARIEL™ if the ARIEL™ address is included in the request. NAL treats ARIEL™ as an alternative delivery mechanism--not an expedited service. NAL will send up to 30 pages per article via ARIEL™. If request exceeds 30 pages, NAL will ship via postal service.

Required data elements for all requests:

- Complete mailing information for all requests regardless of method of delivery. (Borrower's Fax number or ARIEL™ IP address if delivery by either of these methods is desired.)
- Complete citation including verification (source of citation) and NAL call number if available.
- Date after which item is no longer needed.
- Copyright Compliance -- Pre-printed forms must contain your signature to indicate copyright compliance. On e-mail requests include the complete Statement of Copyright Compliance. Libraries may indicate compliance by including the initials of one statement, either "CCL" for compliance with the copyright law or "CCG" for compliance with Copyright Guidelines or a statement that the request complies with U.S. Copyright Law or other acceptable copyright laws (i.e. IFLA, CLA, etc.). Libraries must also provide authorizing official's name. Requests will be rejected if this information is not included.
- Maximum cost you are willing to pay for billing purposes.

Sample Electronic Mail Request

(Your Institutions Name)/NAL JUL25NAL1 Date Not Needed After: 9/25/97

(Your Department or Office
Your University Library or Institution
City, State or Province, Country, Mail Code)

Dr. Smith (patron name) Biology Dept. (patron office)
Canadian Journal of Soil Science 1988 v 68(1): 17-27 (complete citation)
De Jong, R. Comparison of two soil-water models under semi-arid growing conditions

NAL Call No.: 56.8 C162 Ver: AGRICOLA
Remarks: Not available at university or in region
Authorized by: Charles Johnson **CCL** **Maxcost:** \$15.00

(your) Phone# (301)555-1234 (your) ARIEL IP Address: 111.222.333.444.555
(your) Fax#: (301)555-5678

Contact the Access Services Librarian, Document Delivery Services Branch at (301) 504-6503 or via Internet at access@nal.usda.gov with questions or comments about this policy.

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